

Digital City:

Visual Communication via Municipal Twitter Feed in the Urban Northeast

by

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## ABSTRACT

Contemporary cities are physical and virtual. This thesis describes the findings of a mixed-methods study concerning visual images of the city in the urban Northeast of the United States. I ground these approaches in existing literature concerning digital media, visual narrative, genre ecology, urban planning, and virtual places. The first part of the study analyzes the results of a survey in which 150 people responded to questions about social media use and the relationships between image type and the functions of social media in urban contexts. The second part of the study analyzes the results of coding one year of visual images tweeted by @CambMA, the municipal Twitter feed for the City of Cambridge, Massachusetts. These approaches required the development of new tools for analyzing visual communication and genre moves in specific media contexts. My research suggests that specific image types are suited for specific media functions in the context of visual communication in virtual urban environments and that some image types are especially effective in capturing and expressing the city. These findings provide potential strategies for municipal social media channels to consider in terms of how they communicate with their audiences.

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## CHAPTER 1

### INTRODUCTION

Urban living and digital media are two defining (and growing) elements of contemporary society. In the context of technical communication, they are often inextricable; so much of our communication today happens in the city (often about city life) and is transmitted via social media. These are not necessarily clear pathways, though, the figurative landscape of social media being just as difficult to navigate as the literal landscape of the ever-expanding city. Powers (2010) describes us as “surrounded by a ferocious, disorienting barrage of information and stimuli, seemingly spinning out of control” (p. 203). Beyond summing up the overwhelming reality of contemporary life, this sentiment also expresses a need for researchers to organize and clarify the genres and subgenres of communication via social media in urban contexts.

Twitter in particular has become a popular platform for towns and cities to construct virtual forms of themselves and to communicate with their residents. Tayebi (2013) sheds some light on why Twitter may be the platform of choice for municipalities to have a digital voice, explaining how it has “played a revolutionary role in overcoming [the] restrictions of traditional online communication” (p. 91), the two restrictions being that messaging and chat services are often limited to only a few people and broadcasting services require users to search for what they want and then sift through the results. In contrast, Twitter feeds are simply *there*; most are open to the public, meaning that the potential audience is large, and new material is constantly appearing at the top of the feed. To see what might be happening in the City of Cambridge, Massachusetts on a given day, for example, all I need to do is go to @CambMA and scroll. The majority of senders and receivers in this information ecology are individual Twitter users; however,

there is another type of user that warrants research: the city itself as a single organizational author. What will the voice of the city be in the digital age? How can it join the chorus of resident and citizen voices on social media? The voice of a place is intricately linked to the development of that place. The Twitter feed, as a blog, has a narrative consciousness—one could call it metacognitive—and through its “thinking” it processes and reflects what has been, what is, and what may come in the future.

Gordon and Mihailidis (2016) ask us to consider deeply what municipal-public engagement becomes in an era defined by the internet and digital media. Castells (2000) suggests that the towns and cities of the digital era “do not disappear in the virtual networks” but are “transformed by the interface between electronic communication and physical interaction, by the combination of networks and places” (as cited in Gopal, 2007, p. 281). In 2019, social media has become ubiquitous and quotidian to the extent that interacting with a virtual form of a town or city is normal, e.g. “following” the Twitter account for New York City, but this does not mean that these new interfaces and combinations are fully understood. Technical communicators must consider the governmental use of social media as an emerging area of study. Indeed, Jeffres (2007) observes that communication scholars “are relative newcomers in the study of urban areas, whether we’re talking of core cities, suburbs, or communities in general” (p. 47). Kent (2015) states that “the phenomenon of social media still lacks a coherent body of theory” even if social media theories are extensions of scholarship on rhetoric, mass communication, and networks (p. 1). My research is an attempt to examine some of the many “micropublics, human-machine performances, migratory histories, affective geographies, and critical cartographies” of our digital world today (Hudson & Zimmerman, 2015, p. 1).

## **Municipal Twitter Feed as Genre**

The municipal Twitter feed is a narrative and visual genre. This complex form of expression and communication through a digital platform is an interesting context from the perspective of technical communication. Hughes and Hayhoe (2008) define technical communication as a discipline that “tries to understand how people communicate with each other within technical domains” (p. 77). In this case, the technical domain would be Twitter. What makes this research situation unique, though, is that a municipal Twitter feed is not a person, exactly, but a disembodied voice speaking on behalf of a place. It is difficult even to say who owns @CambMA. In the ecology of public digital genres, in which municipalities are personified content creators, a communicative act is “not so much to transmit one person’s knowledge to others as to permit both together to construct interactively a basis of knowledge, which becomes their joint property and thus cannot be said to belong to either of them individually” (Taylor, 2000, p. 10).

If anything, @CambMA is a “place-voice”—and a common one at that. Almost every city in the United States has a feed designated as its digital voice, its digital stream, its digital bulletin, etc., making Twitter the medium of choice for today’s virtual city narratives. The very fact that Twitter is not static lends itself to portraying cities as they are inherently “temporal art” (Lynch, 1965, p. 1). Twitter is the ideal platform for urban narratives because, being a blog, it can be endlessly updated; similarly, “the metropolis is by its very nature in a state of permanent imbalance” (Mumford, 1938, p. 272). For many Twitter feeds, especially ones like @CambMA that are maintained and updated multiple times per day, the narrative is always changing and never finished. Even if it is one step behind the city, it is keeping up more than any static document could.



I suggest that the municipal Twitter feed should be approached as a genre unto itself, complete with its own genre moves and visual-rhetorical patterns. Building on the theories of danah boyd, Dean (2010) suggests that we view blogging as a medium and not as a genre. I would argue that it is a common error to say that social media is a genre. This error probably stems from the transformation of the phrase “social media” from a plural noun to a singular one. For example, consider how often we hear or read about social media as if it is *a thing*, as opposed to *many things*. It is important to remember that “social media” refers to a collection of platforms, each platform being its own medium, though there are some broad patterns that could be considered genre conventions, e.g. the image with a caption, the use of emojis, etc. Twitter, meeting all the criteria for a blog (Standage, 2013), and often called a microblog, specifically, is not a genre but a medium. The municipal Twitter feed, however, is narrow enough in purpose and scope (despite the ambiguities therein) and occupies a specific enough ecology to be considered a genre. This becomes clear through an analysis of the various visual image types that comprise the case study municipal feed of @CambMA, the feed for the City of Cambridge, Massachusetts.

Social media accounts for places are virtual forms of those places. Deuze (2012) acknowledges the potential for social media to create such communities, while Van Dijck (2013) notes the enthusiasm of those who “rejoice at the potential of Web 2.0 to empower users to wield their new digital tools to connect and create, while developing a new public sphere” (p. 16). The unique ability of the municipal feed to create a virtual community or a digital public space this is another genre signifier. As a serialized fusion of image and text, Twitter distills the ability of the internet to provide a powerful “combination of computing, voice and vision” (Balnaves, Donald, & Shoesmith, 2009, p.

32). From its inception, Twitter positioned itself as a multi-tool of sorts, an autonomous channel compatible with other media platforms and easy to integrate into existing channels of communication, making it a standout in the social media ecosystem and a platform that governments quickly (and unsurprisingly) adopted as a virtual public forum for citizens—a digital town square, so to speak (Van Dijck, 2013). Furthermore, as opposed to more closed systems such as Facebook, Twitter has been less about an “illusion of privacy or intimate circles” and more about a method of “interaction with the world at large” (Van Dijck, 2013, p. 83). Twitter is perhaps the most publically oriented of the social media platforms. This genre ecology emphasizes the social group (the party or stakeholder) that is sending or receiving information, reinforcing the notion that genres are delineated by social contexts. This framework includes genre not just as a category of text, but as an inherently social exchange (Henze, 2013; Knapp & Watkins, 2005); and today, “the social manifests itself in a network form” (Lovink, 2016, p. 16). Johnson-Sheehan (2015) provides a useful and concise definition of genre for these purposes as well, explaining how genres are “patterns that reflect” communicative practice and affect the “content, organization, style, and design, as well as the medium” of a given text (p. 2). The municipal Twitter feed can be considered as a scattered, pastiche version of a strategic plan or master plan—both of which can be considered their own genres as well (Haar, 1955; Cornut et al., 2012).

The virtual place built through social media is not built by one single author. Safko (2012) tells us that people use Twitter “to stay up to date on what is happening in the world they have created for themselves” (p. 40). This genre should not be underestimated in its potential to inform and engage the residents of a community, to create a narrative of place and change, and to help create a stronger regional

consciousness and identity. Iyer (2013) finds that the “potential of the new public sphere is still emerging, and though it is fraught with the vested interests of its owners, governments and other institutions, it is too powerful a medium to ignore” (p. 146). It is too powerful to ignore precisely because it is difficult to classify.

The genre is a synthesis of various forms of communication. Part of what makes the case study municipal feed (@CambMA) a compelling example of a trackable genre is its dual use of visual communication and visual narrative. Twitter started as a place to consume and share text, but in recent years has become more of a visual platform (Russman & Svensson, 2017). Perhaps this was Twitter catching up to what it should have been in the first place. Apkon (2013) maintains that the “power of visual media has been with us from the beginning of our species, as we are physiologically constructed to consume and find meaning from images in a way that transcends other forms of communication” (p. 13). Megehee (2010) states that visual narrative art “is the oldest storytelling medium, with cave paintings of animals and depictions of humans hunting animals in Europe dating back more than 30,000 years” (p. 604). In 2019, because its image feed can be accessed by anyone with an internet connection, @CambMA is part of what Apkon (2013) would call a “global visual conversation” (p. 23). However, there is no single image that makes the feed what it is. It is the whole, as always, that is more than the sum of its parts, just as a “story is told sentence by sentence but its meaning is not conveyed by any particular sentence” (Taylor, 2000, p. 33). Technically speaking, the Twitter platform is a reverse-chronological microblog. Visually (and conceptually) it is more difficult to define. Words that apply include: series, combination, pastiche, mosaic, etc. These words are also part of the vernacular of postmodern art, text, and music. Whether or not the Twitter feed can be considered a work of postmodern art is a valid

question. I argue that, at the very least, it is a form of communication that fits into some postmodern lenses.

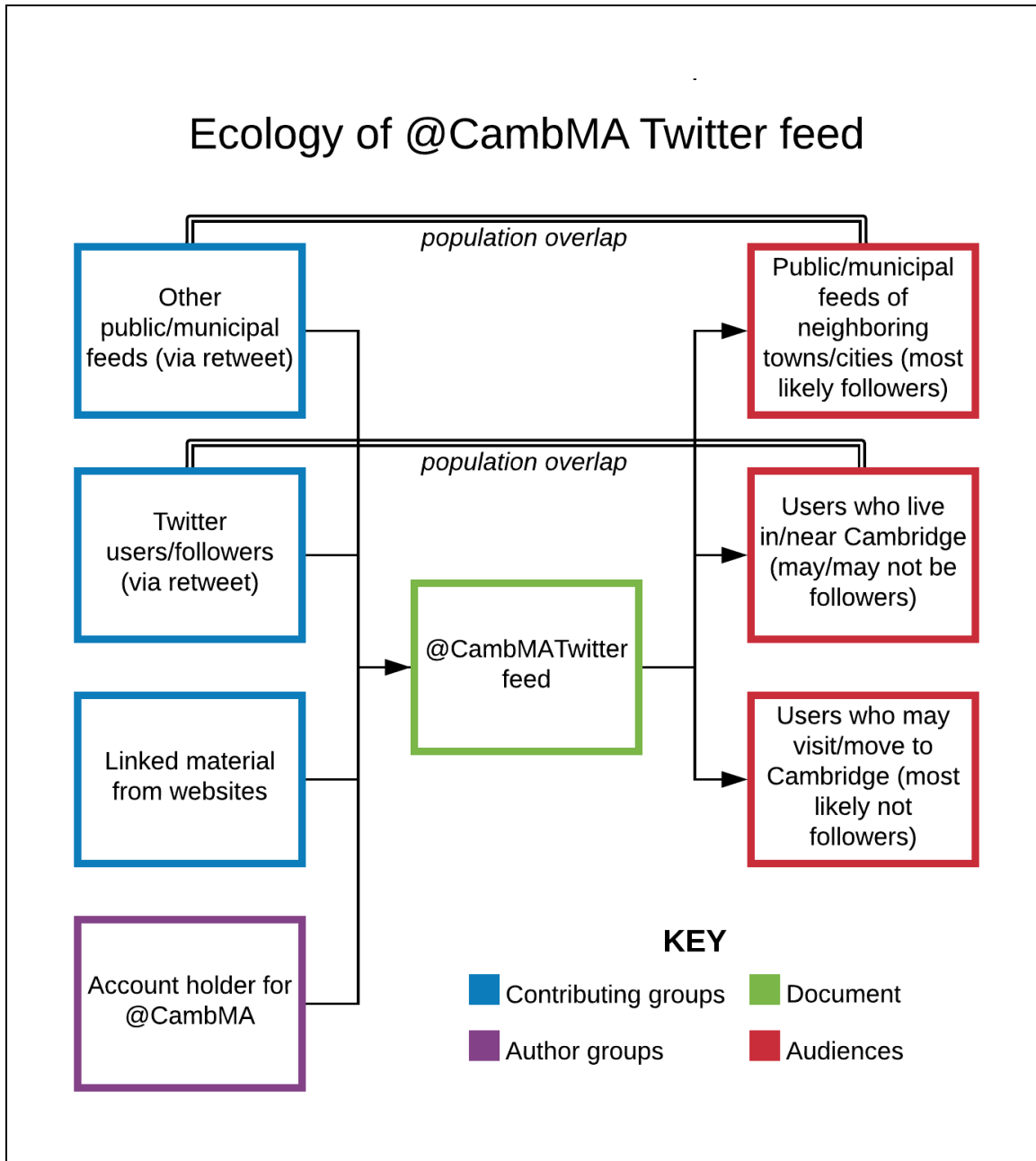
### **@CambMA as Case Study**

This study focuses on @CambMA, the main Twitter feed for the City of Cambridge, Massachusetts, a municipality with over 100,000 residents adjacent to Boston and currently undergoing development and growth. Cambridge is known as a growing hub for scientific, medical, and technical research; demand for housing in the city is high and the real estate market is competitive. The city is also associated with the arts, intellectual and cosmopolitan interests, youthful energy, and progressive politics. If “the future is urban” (Lapham, 2010, p. 13), as so many suggest, then Cambridge is an indicator of that future, albeit one among many (and whether or not that particular future is equitable is another topic entirely). As of 2017, there are approximately three hundred municipalities in the United States with populations over 100,000; while some of these municipalities are losing population, most are gaining, including Cambridge (United States Census Bureau, 2017). The growth of the virtual counterpart of the city, the social media platform, is keeping pace.

If a Twitter feed for a municipality is the “voice of the city,” one would expect to see some of these traits of Cambridge on @CambMA. However, in what forms would these images of the city be delivered? What types of images convey these traits? These are the variables that define and delineate a genre. In order to answer these questions, I coded one full year of tweeted images from @CambMA. Many municipal and public social media feeds have a specific purpose, a specific identity, or represent a specific organization or department. The account for the Cambridge Police, for example, would post more than others about law enforcement, safety information, emergencies, criminal

activity, etc. The same applies for feeds about public works, fire, and transportation. However, @CambMA is not so specific in its purpose. It posts about many of the things noted above, but not exclusively so. It would not be unusual to see a tweet on @CambMA about an emergency update followed by a tweet on the cutest dogs of Cambridge, or an update on a new traffic pattern followed by a photograph of a new piece of public art. The feeds for municipalities as a whole that have no title beyond that of the town or city itself are primarily channels that post a variety of content, sometimes synthesizing information from other feeds, and, ultimately, that reflect the general narrative and “flavor” of a place. In short, these feeds capture—whether effectively and comprehensively or not—a sense of place. @CambMA is the general, do-it-all, “little-bit-of-everything” story of the city. Dean (2010) states that this type of “immediacy helps tie readers to a site as they follow developments in real time” (p. 44). This immediacy is a crucial element of experiencing an unfolding digital narrative. Twitter in particular “creates an ongoing situational present” that gives it this crucial element (Albu & Etter, 2015, p. 10).

@CambMA is a digital form of the city, a way for the city to have a digital voice, a way to see what is happening in the city from anywhere with an internet connection, a platform for providing information, for keeping the residents, workers, and tourists of a city updated, a reflection of the city, and a place where residents can not only find out more about where they live, but where they can see themselves as part of a larger place and place-narrative.



*Figure 1.* Flowchart of the @CambMA Twitter ecology, showing relationships between account holder, contributing groups, the feed and its audiences.

Scrolling through the Twitter feed, one sees right away that @CambMA is image-forward. But what types of images appear on @CambMA? What do these images reflect? How are the visual elements employed by the Twitter feed for the City of Cambridge aligning with the perceptions and attitudes of the people who live, work, or

spend time in the city (or in other cities like it)? What are the ratios of visual forms within the feed, and are those ratios appropriate, whatever that might mean? Framed by the questions above, the goal of my research is to identify the elements of visual genre in the Twitter feed for the City of Cambridge as they pertain to the dual themes of (1) cityscape and (2) the components within the city—cityscape images usually evoking greater “imageability” (Lynch, 1960). This approach also frames the problem as a rhetorical situation in an ecology (Figure 1), for we may ask what seems to be the purposes of the Twitter feed for the City of Cambridge. Do its visual genre moves match the expectations or desires of its potential audience population? To answer this specific question, I conducted a survey of those who live or have lived in the urban Northeast, of which Cambridge is a part, to understand their perceptions of urban environments.

Among the purposes of this thesis is to identify the defining lines (some of which are relatively clear, some blurry) of an emerging genre. These municipal feeds are narratives. But then what is their scale and pace? What do they include and exclude? The social media feed is a flexible document of the digital era. In many ways, Twitter is a communication log or archive that remains dynamic until its end; until that end, therefore, it remains dynamic by definition. Conducting an analysis of @CambMA is, in part, exploring how users navigate a virtual field. However, considering that @CambMA is a visual narrative just as much as a textual one, this analysis requires a new box of analytical tools. Instead of analyzing diction and syntax, a new heuristic taxonomy of image types and visual genres moves is required.

### **Cambridge, Boston, and the Northeast Megalopolis**

Cities today exist in two places: the physical world and the virtual world, the social world being somewhere between the two. The physical city is one of streets,

buildings, parks, squares, etc. The virtual city is one of representation, digital media, e-government, and contemporary planning. Technology, infrastructure (both analog and digital), jobs, culture, arts, and diverse populations make up the cities of today, especially in the urban Northeast of the United States. These cities are dynamic and so are the media that portray them. While the primary audience for @CambMA is the people who live in Cambridge, a map of the secondary audience would extend well beyond.

Cambridge belongs to a unique metropolitan area comprised of several cities undergoing significant growth, so municipal Twitter feeds in this area have the potential to play a role in how residents of these cities participate in e-government and how they interact with their places of residence and work via digital means. As one of the oldest urban areas (on a scale of several million, that is) in the United States, Metropolitan Boston's population has extended well beyond Boston's city lines. I refer to Boston as a "patchwork city." Wood (1997) uses a similar image in "crazy quilt" (p. 7), while O'Connell (2013) refers to the area as a "mosaic" (p. 197). Metro Boston is not only patchwork, but polycentric. Boston's population and economic landscape extends so far beyond its city limits today that while it remains the largest, it is but one of several localities of economic, commercial, creative and residential density. In other words, it is not the only municipality for people in the region to address their various needs, thus meeting one of the main criteria for polycentricity (Meijers, 2005). It is not unusual for residents of a metropolitan area to carry out their lives in multiple municipalities, and the Boston area is a prime example of this phenomenon (Briffault, 1996). Someone could live in Cambridge, work in Somerville, go into Boston for dinner, and then watch a movie in Watertown, all without traveling many miles. This is also a quality of the other major urban centers in the Northeast. These old cities (old being relative and, in this context,



referring to settlement by Western colonists) started as small, densely populated places, established well before (as opposed to *because of*) the proliferation of the suburbs and exurbs in the late twentieth and early twenty-first centuries. For patchwork or polycentric urban areas to succeed, there needs to be a threshold of interaction and communication between municipalities. The connecting lines among municipalities are many; roadways, public transit lines, financial transactions, resource grids, and other types of infrastructure cross over municipal and state boundaries. Communication and organization in this setting is often called regionalism, which is “perhaps best and most simply described as the act of cooperating with one’s neighbors for a common good” (Wood, 1997, p. 3). Dye (1963) also emphasizes “the interdependency of urban communities” in these types of regions (p. 146). This regionalism can even extend beyond a single urban area, and join two or more urban areas. The key takeaway here is that Cambridge does not exist in a vacuum. Studying communication in Cambridge also means studying the Boston area and beyond. In the urban Northeast, municipalities are inextricably linked in both analog and digital ways.

Many other metropolitan areas in the United States have consolidated in ways Boston has not, especially in the South and West. In the early twentieth century, many politicians and political groups developed policy for the region as a whole. However, Boston hit an extreme low after World War II. Between 1950 and 1980, the population of Boston decreased from approximately 800,000 to 560,000, yet the metro area kept growing (O’Connell, 2013). The regional visions slowly gave way as manufacturing and industry declined, socioeconomic and racial divides remained unaddressed, and “white flight” to the suburbs increased, resulting in a fractured and fragmented region (Wood, 1997; O’Connell, 2013). During this low point for Boston, the region seemed more like an

assortment of disparate towns and cities than an interwoven collection of communities that could see themselves as part of a larger whole. Despite never regaining its peak population, the City of Boston is now home to approximately 670,000 residents. The metropolitan area has continued to grow and now contains 4.5 million people spread out over more than one hundred municipalities (O’Connell, 2013). Today, a strong regional identity is emerging, of which Cambridge is integral. Architecture and infrastructure have become increasingly modern, green spaces have proliferated and replaced urban blight, public transit has expanded, universities have grown, and long abandoned lots have been developed. Much of this renaissance started in the 1980s during what has been dubbed the “Massachusetts Miracle.” By the 1990s, many declared Boston reborn, largely as a result of effective governance (O’Connell, 2013; Horan, 1998). How can the legacy of this be documented and preserved in a feed like @CambMA? How can a municipal feed catalog these changes and their legacies, and in what forms?

If Cambridge cannot be studied in a vacuum, then where do we locate the geographical constraints for a sample population? To answer this question, others must also be considered: What are the elements of a city in the Northeast? What variables intersect and interact, in varying proportions, to make a city what it is? Some elements include the people themselves, the densities of population, the cityscape itself and its architectural variances, climate, transit, arts, recreation, resources, construction, development, history, institutions, events, customs, values, and so on. For some cities, one or more of these elements may be more or less integral than another, but many American cities, especially those in the Northeast, are comprised of some combination of these and related elements. First proposed by Gottmann (1961), the Northeast Megalopolis is a name and concept that unites the cities of Boston, New York,

Philadelphia, Baltimore, and Washington DC, as well as their surrounding cities and suburbs. The cities are united in several ways, among them: history, population and resource density, transit, architecture, economy, higher education, political identity and voting patterns, etc. Also consider that of the country's most-used transit systems, most are in the Northeast (American Publication Transportation Association, 2017). These systems not only take people from one location within each city to another location within the same city, but between these cities as well. Today, the vision of the Northeast Megalopolis is an important one for planners. In maps of the Northeast Megalopolis, cities appear densely packed; more than in any other region, with the possible exception of Southern California, they seem to “overlap” on the map. This “overlapping” sums up how Cambridge is not an isolated city but surrounded by other cities and areas that, while unique in their own ways, are all united and connected by distinct threads. Bailey et al. report the results of their research on this social connectedness, finding that cities such as New York, Washington, and Boston “exhibit close ties to one another” and that the “pull of regionalism is strong even for [these] major cities” (as cited in Badger & Bui, 2018). The city centers of the urban Northeast have similar cityscapes as well. “Reflecting on Boston, one thinks not of individual buildings so much as of larger, more collective chunks of cityscape” (Campbell, 1985, p. vii); this goes for the Northeast Megalopolis as a whole. Even considering iconic structures in New York such as the Empire State Building, the whole skyline of New York is the engaging image. Lastly, in each urban area of the Northeast Megalopolis, the population within the limits of the core city has less than 50% of the metro population. In some cases, the population of the core city may be 25% of the metro population. These core cities are still among the most populous municipalities in their respective states, if not *the* most populous. This means that there

are many smaller cities in each urban area (in other words, many corollaries to Cambridge, unique and distinctive as it may be). In short, Cambridge is part of the “rapid urban growth and the establishment of megacities” that defines our current era (Jamei et al., 2017, p. 1).

### **Synthesizing Theory and Research**

This study is important because it addresses the intersection of technical communication and social media and does so via various critical theories and lenses, several of which are not always applied to the study of technical communication, among them genre theory, postmodernism, network theory, and visual narratology. Following municipal Twitter feeds is like entering the virtual version of a town or city; it is a simulacrum—a comfortable, recognizable, and generally expected one, to be sure, but a simulacrum nevertheless. In this sphere, which elements of what image types do social media users find most effective? These intersections are complex and rich areas for research. Zonn (1990) links genre, rhetoric, place, and visual communication in asking: “What is the purpose of the creator’s actions? What about rationale and objectives? Why is this information about place included in a particular image? What role is information about place supposed to play in that image?” (pp. 3-4).

I would like to emphasize that my project focuses specifically on the *digital* visual image. The images on @CambMA may have been composed or arranged by humans, but all were captured with the aid of machines, were processed through machines, and were made accessible via machines. Van Dijck (2013) reminds us that our social media have “become a coproduction of humans and machines” (p. 33). Regardless of the provenance of its content, and speaking as broadly as possible, a Twitter feed is attempting to communicate information. If a “social network’s goal is to build trust in a given

community” (Safko, 2012, p. 28), then this is especially true when it comes to the obligation of a town or city to provide residents or visitors with information. Some might say that, by definition, an analysis of Twitter will become outdated sooner rather than later, even that Twitter will not exist in a decade. After all, the history of social media, though brief, is already littered with defunct platforms such as Myspace. That is the reason to analyze Twitter, though. In today’s swiftly changing digital media landscape, the window for analysis starts closing almost as soon as it opens. Wagner (2019) warns that “librarians and archivists have implored us for years to be wary of the impermanence of digital media; when a website, especially one that invites mass participation, goes offline or executes a huge dump of its data and resources, it’s as if a smallish Library of Alexandria has been burned to the ground.” Loss of data on a massive scale has happened before. Myspace, once one of the largest and most popular social media sites, recently lost all of its content posted before 2016 (Hern, 2018).

My research questions concern how towns and cities communicate with residents via Twitter. Half of this question concerns the sender side: what are the towns and cities saying on Twitter and how are they saying it? The coding of one year of tweets from @CambMA will address the sender side of this. The survey (attached as Appendix A) is designed to address the need to know more about the receivers, which means learning about the attitudes of those who spend time in the urban Northeast. What is the difference between the virtual city and the perceived, experienced, and observed city? The results from this survey can establish data against which the coding analysis can be compared, as answers from this survey can be correlated with specific codes. With two sets of data, new observations can be made. Johnson-Sheehan (2015) reminds us that a “document should conform to a recognizable genre” (p. 501) and that it should “be

designed for its readers and the contexts in which it will be used” (p. 502). Comparing the coding of @CambMA and the results of the survey can help measure the distances between document presentation and audience expectation and between design and use.

## CHAPTER 2

### LITERATURE REVIEW

My research rests on a foundation of scholarship in the areas of urban planning and networked communities; it also aims to build on the smaller and still evolving bodies of research on how towns and cities communicate with residents in the digital era, the role of digital media in local government, Twitter being used as civic media, real places transforming into virtual places, and the use of virtual reality in urban planning.

Municipal social media and urban planning are not synonymous, and @CambMA cannot be seen as the practice of traditional urban planning; however, it can and should be seen as a potential instrument of planners, as an artifact of planning, as a way to communicate questions, concerns or findings of planners, and as a nexus between city and citizen.

Over the course of the twentieth century, there were frequent pushes for planning to involve public participation (Fagence, 1977). Haar (1955) and Lane (2005) both emphasize the importance of public participation in local government and public access to government documents. In twenty-first century terms of geography and place, Ellard (2015) finds that “the world of computing and visualization has changed over a few short years” (p. 175). Today, digital technology and media have created an unprecedented environment for such engagement. Gordon and Mihailidis (2016) open *Civic Media* by wondering what “civic engagement” becomes “in a digital age” (p. 1). Online platforms have great potential to involve citizens in e-Democracy (Lackaff, 2016), but the future of such technologies remains uncertain.

#### **Digital Citizenship**

Albert, Flournoy, and LeBrasseur (2009) describe the contemporary city as a place of digital citizenship held together by networks. Jeffres (2010) also defines the city

as a site of technology, diversity, and intercultural communication, where communities are virtual as well as physical. The digital citizen is a relatively new phenomenon for cities, and one that signals a changing relationship between people and place; “citizens are expected to be always at fairly fixed points of intersection offline, but cybercitizens can now interact anytime from anywhere in ways that challenge the traditional notions of fixed citizenship” (Luke, 2010, p. 88). Jassem (2010) introduces one of the dualities of urban planning today, telling us that images of the city both “reflect and project” innumerable elements: desires, attitudes, hopes, fears, the past, the future, and so on. Grey (2010) suggests that a place “imagines itself through representation” and that “these narratives play a profound role in shaping urban identity” (p. 53), while Monberg (2010) finds that the “city has always been sited at a location that is both physical and imaginary” and that “the present era is marked by a distinctive emphasis that reflects on the relationship between the material informational infrastructure of the city and the imaginary boundaries of its conceptual space” (p. 65). The cities of the twenty-first century are defined by places both real and virtual; they are places of unprecedented technological and social densities (Jeffres, 2010), where joining a community is often synonymous or synchronous with the access of digital technology and media (Albert, Flournoy, & LeBrasseur, 2009). The city is no longer just a place of metal and concrete. The information age has created cities that exist in intangible, digital spheres. López (2008) wonders about the “real geography of our times” and if or where it exists (p. 68). These observations evoke Benjamin, Jameson and Baudrillard just as much as Jacobs or Lynch. López (2008) explains how Benjamin “was suspicious that something significant had taken place in the nineteenth century, some kind of moment when reality accelerated into the technological media bubble of our times” (p. 59). Today, feeds like



@CambMA allow us to become digitized versions of Baudelaire's flâneur strolling through tweets instead of streets.

For some residents, accessing this emerging world could look like joining a neighborhood group on social media. For others, it could be browsing the digital renderings of a proposed development downtown. The vehicles for this digitally mediated interaction range from government posts on platforms like Twitter or Facebook (Hofmann, Beverungen, Räckers, & Becker, 2013; Williamson & Parolin, 2012) to much more niche applications such as PDPal, “an icon-based interactive map wherein users can mark and annotate sites, experiences, and people in specific urban environments” (Gordon, 2007, p. 136). Municipalities have good reason to adopt emerging media in an attempt to engage citizens. One of the key principles of city making is to involve those in the community, especially those who will be most impacted by the manifestations of planning (Landry, 2006). Lev-On and Steinfeld (2015) find that content posted by an Israeli municipality on Facebook can generate more engagement from residents than material posted by a resident. More recent is the implementation of 3D renderings and virtual reality (Laurini, 2001). In recent years, New Yorkers were able to participate in the planning of the High Line project through high level visual engagement (Gravel, 2016). These approaches often appeal to the visual sensibilities of the audience. In the context of communicating a potential future to urban residents, virtual reality takes on a more flexible meaning than, for instance, “digital image consumed via a piece of wearable technology.” For example, a rendering of a proposed building in a neighborhood that already exists is a form of virtual reality in terms of how the viewer engages with the image. Virtual reality thus becomes an abstract sense or concept, related to but distinct from its physical counterpart—the product that provides a

more immersive experience, but not necessarily a more virtual one. The flat screen can provide an experience as virtual as the VR helmet. Hudson and Zimmerman (2015) state that “screens function as contact zones between physical and virtual worlds where we enter into the digital enclosures of networked societies” (p. 16). This language links the virtual experience with the social experience. It is within that very linkage that the municipal social media feed and the digital citizen exist.

### **Virtual Place**

In 2012, Twitter’s chief executive, Dick Costolo, compared the social media platform to a “global town square” and a “Roman Forum or Greek Agora” (Standage, 2013, p. 232). The eagerness to label the internet as a place or space has a long history, and blogging in particular lends itself to being about place, to being compared to a place, and to being designated a place. Much like scrolling through a blog, the “story of every city can be read through a succession of deposits: the sedimentary strata of history” (Mumford, 1938, p. 223). Dean (2010) suggests that we use the term “blogipelago” instead of “blogosphere”—the latter being rather amorphous (p. 38). Hudson and Zimmerman (2015) note that the definition of location itself has changed; it is “no longer an obvious designation—something locatable in space” (p. 11). They explain how digital “networks are experienced as what we might call *cyberplaces* rather than a universalized cyberspace. The Internet might be promoted as a virtual space, but is experienced as a virtual place” (p. 12).

Some of this language may sound utopian. The etymology of utopia is Greek; it means *no place*, as opposed to *perfect place* (Pinder, 2006), which implies that utopia is somehow separate from us, that it exists in a different physical and temporal state—much like virtual reality occupies space on a screen but remains forever separate.

When the vision rendered by virtual reality becomes real it is of course no longer virtual. Pinder (2006) discusses utopia as a genre all its own, one marked by multimedia expression. Historically, the utopian genre has most commonly been portrayed through literature or through painting. Pinder (2006) focuses not so much on digital media, but on the visual portrayal of the city and how that portrayal is crucial as the visual provides a space for a “visitor” (in this case a reader or viewer) to explore a utopian place (such a hypothetical version of the city). The ultimate goal, I argue, of any kind of vision for a city is exactly that: for a current or prospective resident to be able to explore a place that is nowhere, that is not real, but that *could* be real. One could argue that, as a mental exercise, imagining another place is as old as human imagination. However, we are only in the nascent phases of harnessing this exercise with technology, applying it in a practical sense, and being able to gather data. With current technology, researchers can “look at the responses of visitors to virtual cityscapes to measure their responses to places composed of many city blocks of space” (Ellard, 2015, p. 180). On the same theme, Langan (2000) suggests “a quantum leap, perhaps an essential change in the nature of the tools, altering the man-tool relationship itself” (p. 78).

Pinder (2006) locates the visual utopian impulse in several trends of the twentieth century, among them modernism and postmodernism, but devotes a special focus to the balance between the abstract and the physical. Pinder (2006) discusses this balance in terms of artistic style; there is a similar balance, for example, in the master plan for a town or city in the ways it must walk the line between abstract and physical desires for a town or city. The abstract cannot be measured so easily while the physical includes measurable things such as natural resources, space or finances. Pinder (2006) suggests that utopian projections today only have a role in artistic worlds or perhaps for

marketing purposes, but I argue that they very much have a role in urban planning and especially virtual reality and the depiction of a world just on the cusp of becoming real.

Allmendinger (2001) further explores the intersection of urban planning and postmodernism. In the postmodern era—one defined by capitalism, media saturation, attempts at self-awareness and self-examination, and ultimately an intersection and subsequent Baudrillardian confusion between the real and the virtual—the computer screen and its associated digital media become quintessential postmodern vehicles. Allmendinger (2001) traces the dual histories of the modern era: the capitalist and the dystopian/utopian imaginings of the twentieth century. This dual history is a crucial part of the boundary between reality and its representation—or perhaps more accurately the lack of that boundary. Allmendinger (2001) provides much for the contemporary planner to consider. For example, when an urban planner in the twenty-first century presents something to stakeholders, they are effectively showing multiple possible realities—or simulacra, to use more postmodern terminology. We hope that those inhabiting these ecologies understand the situation is one of multiple realities, one that seeks to somehow change the reality that is not even in front of them. Ellard (2015) describes the experience of using virtual reality as “a bit like lucid dreaming” and notes that users “never completely lose awareness that that they see in front of them is a kind of perceptual trick” (p. 175). In other words, the audience is expected to understand the virtual nature of the presentation. Is this expectation a realistic one in 2019 as the difference between “real” and “fake” on platforms like Twitter and Facebook has become the topic of something between a national discussion and a national panic? It is precisely because of these concerns that Twitter needs to be the subject of analysis.

## **Power of the Visual**

There is an abundance of existing research on the language of social media. Textual analysis of social media platforms is an established field. While the internet has always been a place for visual communication, discussions and analyses of its history have been focused more on text than on image. Consider, for example, how one of Twitter's defining elements during its nascent years was its maximum of 140 characters per post (Dean, 2010). That limitation was once synonymous with the platform. Now that Twitter has advanced in its capacity to embed images, this text-based limitation has become, simply put, less limiting. Like the internet as a whole, Twitter's history of image-based communication is smaller (though perhaps not younger, after all) than its history of text-based communication. Considering the above allows us to make a reasonable assumption: more questions have been asked about the textual style and grammar of social media than of the visual styles and grammars. If this is too great a leap to make, then the following, at least, is true: the answers to questions about textual styles and grammars are not going to be the same for questions about visual styles and grammars; conclusions about the textual cannot be translated with any confidence to the visual. Dean (2010) also notes that a "benefit [of Twitter] over blogs is brevity—one can keep up without having to spend much time doing it—and mobility—one can post and receive updates via mobile phone so one can always be connected" (p. 36). This may help explain why Twitter has shifted from the textual to the visual. The images on social media "seem real in part because they are only glimpses, fragments, and indications rather than fully formed and composed reflections" (Dean, 2010, p. 36). Apkon (2013) builds on research by Uri Hasson on the intersections of image, narrative, and the brain: "One thing should be made clear about this new science. Images *must* be accompanied

by a narrative if they are to have any value. Some of Hasson's most important work shows that this is not just a picturesque idea, but one that is built into the very architecture of the brain" (p. 91). Images need a narrative to have value, but the narrative need not be text. In thinking about Twitter as a form of narrative, one may need to consciously work against what Taylor (2000) calls the "tendency to think of narrativity as limited to explicit storytelling" (p. 32). In the case of a Twitter feed, images become the narrative themselves via sequential ordering and juxtaposition. Dean (2010) describes the initial concern with Twitter before it became visually oriented: what can anyone really say if posts keep getting shorter and shorter in terms of character limits? It does not matter that Twitter actually extended the character limit later on; the image-as-post avoids that question altogether: with images, Twitter actually says more, not less.

Berger (2012) claims that we "communicate through images. Visual communication is a central aspect of our lives" (p. 2). This is the case regardless of whether we are receiving information in the physical or digital world. The appeal of the visual image is seemingly limitless in both. Bonsón, Royo and Ratkai (2014) find that photographs in Facebook posts by municipalities in Western Europe increase user participation. Other digital media use the visual image for communicating raw data, while still retaining the high potential for meaningful communication between a town or city and resident, i.e. GIS programs (Redaelli, 2012). It is crucial to remember that *how* we visualize data matters in terms of engaging the public (Williams, 2016). Any role that digital media will play in urban planning and design will revolve around the visual. From virtual reality to the master plan, the whole notion of the town or city communicating its goals to the residents relies on some sort of vision, whether that be one of dreams and imagination, printed paper, or one on the screen. I would argue that virtual reality is an

intermediate step between the imagination and the physical manifestations of planning. Pinder (2006) focuses on how the urban place, and specifically the vision people create of it, has often been one of the primary concerns of the utopian thinker. Applying these concepts to Twitter specifically, Iyer (2013) states that the “cyber-utopianist would argue that [the ability for users to tweet and retweet], combined with the universality of access—anyone can set up a Twitter account, and it is as accessible by a desktop PC as it is by mobile phone—means that Twitter can be viewed as something of a ‘democratic enabler’” (p. 141). Urban planners today are thus visual-utopian thinkers insofar as they design versions of the city that do yet exist but that are ostensibly better than the current iteration of the city, though they may not be perfect.

Berger (2012) applies to visual communication a framework developed by M. H. Abrams for categorizing the relationships between a work of art and its audience. Berger (2012) lists the “four opposing major theories” (p. 36) as: *Pragmatic*, (having a purpose), *Objective* (creating a world), *Emotive* (generating sensory or emotional reactions), and *Mimetic* (reflecting reality). These theories need not be opposing in a medium such as Twitter, though, which is constantly updating and consists not of a single image, but of hundreds; Twitter is functionally endless as far the audience experience goes, bounded only by the time available to the user to browse Twitter and a server capacity which no one user could ever realistically approach.

### **Grammar of Place**

The history of the city as the site of virtual place, of future-dream, and of utopia is a long one. Consider the Renaissance tradition of painting the “ideal city”—a quintessential example of which is Fra Carnevale’s *The Ideal City* in Figure 2 below. It is also important to note that these images are cityscapes. More recently, there is the

history of the virtual city in digital forms, including computer and video games in which users navigate a virtual world that is either built for them or that they build themselves (as in the SimCity games).



*Figure 2.* Fra Carnevale’s *The Ideal City* (ca. 1480-1484). Courtesy of The Walters Art Museum, Baltimore, MD.

A feed like @CambMA is part virtual city and part visual narrative. In this sense, it is useful to view the feed through the lens of contemporary city-art. Just as visual artist Julie Mehretu’s work contains “histories real or imagined, specific architectural designs, lived experiences known by the artist through personal understanding or anecdotal accounts, Utopian visions, and blatant ugly truths” (Hart, 2007, p. 55), so does @CambMA. Furthermore, as “contemporary geographers and artists...challenge the model of a single narrative as they pose alternate histories that are not part of dominant cultures, economies, and theories” (Hart, 2007, p. 56), @CambMA should strive to include the diverse viewpoints and experiences of its communities. @CambMA documents what has happened, what is happening, and what may happen in a city. This “contradiction between urbanism and mobility”—one where “cities are composed of structures fixed in place, while mobility connotes a state of constant flux” (Katchka, 2007, p. 60) is a feature of contemporary city-art as well. Mehretu creates “postmodern



geography” as an artist. Does @CambMA not create the same? Images from various topics interspersed with each other makes for a truly contemporary genre (analogous to the music playlist). The municipal Twitter feed is postmodern—not just in creating, through collage, a virtual city, but also in the very restrictions and liberties inherent in it as a microblog: short snippets of meaning, each standing alone yet also part of a whole. The feed is a postmodern whole replete with oxymoron: a fractured, fragmented whole. Consider how the way in which Allen (2007) approaches the city-art of Mehretu applies to a visual municipal Twitter feed: “Samples are taken from the world, but with the tacit understanding that these represent but a fraction of a limitless number of options” (p. 53); when users scroll through the feed of @CambMA, they are both “removed from the fray” (p. 53) and “overwhelmed by the scale” (p. 54), much as they are when viewing Mehretu’s city-art. Still, as viewers, they recognize that the stream of images constructs an urban scene. Mulder (2004) states that each “kind of art distinguishes itself from other art forms and from all non-artistic forms by conjuring up a specific kind of illusion which the audience experiences as real” (p. 185).

Landry (2006) stresses the importance of engaging residents and stakeholders in the planning process. This includes everything from the rhetorical—for example, dropping the overly technical jargon in master plans that alienates many residents, especially those which may not speak English as a first language—to appealing more to the stories and identities that comprise the city. Bonsón et al. (2014) find that citizens are more likely to engage with material on Facebook if it is “related to their everyday lives” (p. 59). People need to be able to weave information into their own narrative for it to be valuable. This is a crucial element for a planner and urban communicator to consider: the city as a backdrop for stories, a place where residents explore their identity

and perhaps help chart a future for the city. If the present city is in the middle of the story, then we must consider what the following chapter will bring. Langan (2000) states that what “we are willing to think about plays a big role in determining what we can imagine, which is further conditioned by what we have experienced, read about, or seen in art, photos, or television” (p. 162). What “we are willing to think about” is often catalyzed by the stories we encounter, especially the stories we realize are actually about us in some way, or hold some significance for where and how we live.

The municipal Twitter feed is far from the first virtual city or digital city, and diction that suggests a sense of place, even as one engages with a completely virtual sphere no more physical than a screen in front of them, is as old as public access to the internet. Consider the browser names of Netscape Navigator or Internet Explorer, the key diction-move being that which takes the verbs “navigate” and “explore” (things that people do in physical places) and turns them into nouns referring to the technology itself, suggesting an inseparability between the two. What do people do on the internet? They “surf” it via Safari. When internet users message other people with similar interests it could be in a *chatroom*. James (2010) also uses phrasing that creates a linguistic link between real and virtual places, stating that the “American open road [of today] is the information highway” (p. 203). In the 1990s, “Geocities succeeded by creating a sense of physical presence in the bits and bytes it doled out to users. But in sacrificing a sense of utopian ambition to give its early users something closer to their physical surroundings, the site also enacted a spatial politics rooted in American history, bound to the nation’s history of settler colonialism and suburban sprawl” (Howard, 2019). Has our internet today become a megacity that people can scarcely navigate? Perhaps, but then the need for local municipal feeds is even more pressing. @CambMA is navigable in ways that

“internet sprawl” is not. There seems to be a palpable nostalgia for the internet of old, presumably before it became a tool for misinformation and coercion (as if these things did not exist before the twenty-first century internet). Howard (2019) notes that Geocities, as a community where “fellow users understood [each other] as digital neighbors, was an alluring proposition.” Does @CambMA not meet that desire for a digital neighborhood? Lovink (2008) states that blogs “were presented as the next wave of voluntary alliances that users seek online” (p. xi). Has @CambMA not largely met that criteria, despite whatever flaws are in it?

### **Social Networks**

Van Dijck (2013) observes how a “widespread presence of platforms drives people to move many of their social, cultural, and professional activities to these online environments” (p. 4). This is especially true, I argue, in terms of urban citizenship. Referring to Actor Network Theory, Van Dijck (2013) explains how these platforms “would not be considered artifacts but rather a set of relations that constantly need to be performed; actors of all kinds contribute *meanings* to platforms (p. 26). In this context, the platform “shapes the performance of social acts instead of merely facilitating them” (Van Dijck, 2013, p. 29). Lovink (2016) explores how the current intersection of network and city is actually not so new; the 1990s had its own fascination with the digital/virtual/smart city and the city as the home of the information system is perhaps centuries old. Lovink (2016) contends that how these systems impact urban places on a local level is an academic topic with many unanswered questions; “the 1980s gave birth to the media theory, and the 1990s were the decade of networks, we are now living under the spell of the platform” (p. 2). López (2008) explains the importance of media ecologies and builds on the theories of David Orr, namely that ecological design involves

some sort of synthesis and symbiosis between systems and places. @CambMA is a mirror of Cambridge. It is not a perfect mirror and it is not the only mirror, but it is a mirror nonetheless. López (2008) notes the transition from the suspicion of the mirror and the reflected world in Socrates to the optimism, ambiguity, and near-mysticism that Benjamin finds in the mirrored world and its potential, through various media, to “bring objects closer to people” (p. 62). Looking for an old tweet has now become similar to digging through layers looking for an object; media researchers can become archaeologists of the internet. It can require the right digital trowel to find them, but “posts may have an afterlife available to search engines as viable permalinks on persisting blogs or even archived somewhere along with the rest of the internet” (Dean, 2010, p. 47). Today, there are several sites specifically designated as tweet archive navigators, sometimes called tweet viewers (I used OmniCity). “Tweets are persistent as they can be accessed in the same form as their original display any time after their creation” (Albu & Etter, 2015, p. 9), to which Wagner (2019) would add an important reminder: no document is permanent, not even when its provenance is digital.

Latour (2005), building on Actor Network Theory, observes how the growth of technology has actually muddied the idea of the social, not clarified it. For Latour (2005), the social world is one of constant re-association and reassembling; it “cannot be construed as a kind of material or domain” (p. 1) and it “seems to be diluted everywhere and yet nowhere in particular” (p. 2). @CambMA may resemble the community bulletin board or the town crier, but it is inherently different because of its paradoxical status as placeless place. What comes from the social is not necessarily social in the same way. It is interesting to note, then, how much vocabulary used to describe the internet and digital media—even in their early forms—is the language of social places.

## Information Histories

Omar, Stockdale, and Scheepers (2014) describe local government as the closest form of government to citizens. It manages local life in a more tangible way than the federal government, affecting things that we actually see and do. While social media is relatively new, citizens probably expect their local government to have some sort of digital face. Furthermore, while most social media users are still individuals, the social media landscape has become one with organizational and governmental users diverse in scope and intent. The individual might use social media to connect with friends while the business might use it to keep customers informed of new products. Increasingly, local governments are adopting a presence on social media as a way to keep citizens informed and engaged in the community *and* individuals are using social media to access their local governments. People are turning to Twitter for more than just socializing with friends, following celebrities, and promoting their own opinions. They seek information through a social *place*. Graham (2014) also reminds us that the history of governments and public bodies using the internet is quite long. Standage (2013) describes how Tim Berners-Lee, inventor of the World Wide Web, “was browsing the web, then still in its infancy, [when] he stumbled upon a web-based exhibit of Renaissance art from the Vatican, based on images posted online by the Library of Congress, wrapped up in a few simple web pages by a Dutch programmer. As a colorful illuminated manuscript unfurled on his screen, Berners-Lee recalls, it took his breath away” (p. 224).

There is a rich history of local government, urban planning, and civic institutions in the United States and as one of the older cities in the nation, Cambridge is part of this history. Metropolitan Boston, of which Cambridge is an integral part, has a strong history of regional planning as well. In terms of recent history, the urban area is

experiencing significant growth. Effective urban planning is part of this process, but the role that digital and social media will play in this development remains relatively unexplored. In short, research is abundant on the urban planning, light on the role of master planning and strategic planning in the modern era, and even lighter on social media as a method for municipalities to communicate with residents. Historically, the master plan has been one of the primary documents used to inform residents about the current status and the potential future of where they live and work. Social media feeds such as Twitter, on the other hand, are dynamic and ever-changing. The master plan is static, while Twitter communicates a vision for a place one tweet at a time. As a microblogging medium, a Twitter voice comes from the composite of hundreds of tweets and thus forms a new type of virtual city.

The virtual social places of today are new but not without precedent; in many ways they are continuations of local government spaces and information infrastructures such as the library and the post office—places that are public, civic, and uniquely urban in their origins. As cities and technological capabilities expanded in the nineteenth century United States, so too did access to information for urban dwellers. Perhaps most importantly, this included access to reliable correspondence with and within the private and public sectors, along with access to dictionaries, atlases, books on history, science, agriculture, etc. (Wiegand, 2015). In short, the institutions made real by urban planners provided residents with access to important knowledge, whether it be for personal reference or for professional purposes. Townsend (2013) describes how the “growth of cities and the spread of information technology are so strongly linked” (p. 6). Municipal planning has largely guaranteed the public’s ability to access, send and receive information. Information technology and infrastructure have gone hand-in-hand with

the development and the proliferation of the American city. Urban centers are not just areas of high population density but also areas of high intellectual, cultural, academic, and artistic density; for these densities to remain stable there must be infrastructures and media channels to support them. The history of the United States overlaps largely with the Industrial Revolution and the Technological Revolution. Thus the planning of the modern American city runs parallel with the planning of modern information infrastructure. The planning of the library or the railroad or telephone wires were simultaneously the planning of information and the planning of the city. Today, all internet users must consider the degree to which digital infrastructures and systems continue to shape our communities. Jack Dorsey, cofounder of Twitter, has the “stated objective of turning the platform into a utility” (Van Dijck, 2013, p. 69). In terms of municipal feeds like @CambMA, this objective has at least partially been met.

In retrospect, it almost seems that the internet was built for the municipal Twitter feed. In many ways, the municipal Twitter feed, with its attempts to inform, educate, and create community, harkens back to the birth of the internet itself. Standage (2013) describes the early internet as a “place for people and ideas to meet, just as they had previously in coffeehouses, at scientific societies, and in the pages of scientific journals” (p. 223). It is crucial to note here how the early conceptions of the internet were social- and place-based; the “new place” and the “coffeehouse” are echoed in the virtual cities of municipal Twitter feeds. Similar language is used when describing the early libraries and post offices of the United States. Benjamin Franklin’s library project, called the Library Company, “served as a forerunner of the American public library. First, it assumed a position in a colonial public culture with older social institutions like the church, and newer social institutions such as bookstores, taverns, post offices, and coffeehouses

where colonists began to develop a public interest” (Wiegand, 2015, p. 8). This is similar to the early mailrooms, which John (2000) describes as places of information transmission and social gathering. It was a deliberate choice by Franklin to have the library be a social place. This should come as no surprise as Franklin was an experienced urban planner, and urban places are social places. After all, “What is the city but the people?” (Shakespeare, 3.1.249). Franklin in Philadelphia created a prototype of the contemporary library we know today, and early American information infrastructure, which is a product of urban planning, gave residents the ability to access crucial information. The type of information guaranteed by this planning is information that today we could not even consider not being able to access. Our digital technologies have made this information readily available, but even without them the idea of not being able to use a dictionary or an atlas seems scarcely believable.

Reps (1965) details a running thread of how the earliest American towns and cities needed to incorporate information infrastructure as well as brick and mortar. Reps (1965) explains how colonial American cities were places of higher learning and of relatively reliable access to information, noting how a “common pattern” of community planning in New England and a “basic pattern of land development continued to guide the progress of settlement until the Revolution” (pp. 119-120). Later, when it came to Philadelphia, “earlier city planning concepts and achievements” acted as precedents (pp. 162-163). The shared planning history of the urban Northeast is one of the things that continues to hold it together today as the Northeast Megalopolis.

Libraries and post offices exist in all American places, from the inner city to the rural outpost. However, their origins, as with most examples of contemporary information infrastructure, can be traced back to the early American cities and to urban



planning initiatives. Social living and information technologies are intertwined. It does not seem likely that American cities could have continued to expand and develop without civic institutions and information infrastructure. What seems even less likely is that urban dwellers would have had access to necessary information—access to which many of us today consider a basic function. Today, dictionaries, atlases and translations are available in a few seconds via smartphones. But in seventeenth-century Cambridge or eighteenth-century Philadelphia, the university or the library was the only way that many residents could utilize such resources.

The information infrastructure of the American experiment has been both tangible and intangible. The library is an example of information infrastructure, for example, and a library is more than just the building itself; it is home to literacy, understanding, professional development, and so on—none of which can be measured or weighed. Wiegand (2015) explains how “libraries existed not just to collect and disseminate printed texts; they were also rooted in voluntary associations established for group activity. As a result, they functioned as places where people could develop social networks and participate in local culture” (p. 7). The post office is another example of information infrastructure, the functions of which extended beyond the purely physical. It, too, functioned as a site of local culture. What both of these civic institutions have in common is that they were products of American planning. Today, Cambridge’s creation and maintenance of a digital feed is a similar product of planning.

In the eighteenth century, the clustering of population density coincided with (and brought about) significant technological advancement, resulting in cities such as Boston and Philadelphia becoming hubs of education and technology, the “twin centers of the early American Enlightenment” (Crunden, 1994). This is not meant to be

surprising, considering that Cambridge (across the Charles River from Boston) was home to the first institution of higher learning in the United States. Harvard opened its doors in 1637 and “its creation bears testimony to the thirst for knowledge and the respect for learning of the New England colonists” (Reps, 1965, p. 126). We can view the opening of the first college in the United States as part of the larger Enlightenment sweeping through Europe in the eighteenth century. What makes this period important is that it was marked not only by scientific discovery and philosophical progress, but by increased public engagement with institutions of higher learning and with sites of information transmission.

Benjamin Franklin saw libraries as places distinct from other institutions, arguably as precursors to the spirit of the Internet, emphasizing over everything else reliable access to the crucial, practical information that would be found in atlases, dictionaries, encyclopedias, books on history, science, agriculture, and so on (Wiegand, 2015). Mumford’s (1938) words from over eighty years ago are now eerily prescient, noting a shift from “a world in which material bodies and mechanical motion alone were real to a world in which invisible rays and emanations, in which human projections and dreams, are as real as any immediately visible or external phenomenon...and on occasion more important (pp. 300-301). The stories and histories about places are just as important as the places themselves.

### **Social Media Concerns**

Each day seems to bring another commentary on the toxicity of social media. Consider the piece “The New Reading Environment” by the editors of *n+1* (2018), which calls Twitter a “a scrolling record of bad reading habits” that “has helped turn the internet into an engine for producing op-eds” in a growing landscape of

“misinterpretation, cooptation, and misunderstanding.” Wagner (2019) speculates that “bad things about the contemporary internet pretty much outweigh the good.” Many have called blogging “parasitic, narcissistic, pointless” (Dean, 2010, p. 36). Other pieces are even more blunt in their criticisms, simply calling Twitter a platform for tyranny. I would suggest that the municipal social media feed is different in some key ways from the social media accounts that could be considered harmful. Certainly, no author or group is immune from bias in any communicative situation, but local governments—which are neither businesses seeking profit, nor celebrities seeking fame, nor individual politicians seeking election—are not at the core of this epidemic of fake news and misinformation. Not all Twitter feeds are the same and it is dangerous to generalize their intentions and impacts. Olsson and Eriksson (2016) take an optimistic view of municipal social media, especially in terms of the role it can play in “crisis communication.” Among those interviewed for their study, a “police representative [stressed] that social media provides the agency with a direct channel to citizens without information being filtered or altered” (p. 194). Thus, the municipal feed has the potential to cut through “fake” social media.

## CHAPTER 3

### METHODS

The research approach for this study is a mixed-methods one via the development of a new, taxonomic heuristic based on visual themes and forms, the coding of tweets by @CambMA, and a survey with an emphasis on image-based questions. The qualitative analysis consisted of coding tweets on the @CambMA Twitter feed while the quantitative analysis consisted of analyzing data gathered through a survey created in Qualtrics and then posted on Amazon Mechanical Turk (MTurk). Among other questions, the survey asked respondents to select images that best applied to a certain context or circumstance. These images were all posted as tweets on the @CambMA feed. These two research approaches are united under an analytical framework: visual genre analysis. Performing a visual analysis of Twitter feeds is a good strategy in the context of governmental communication where traditional, quantitative metrics may not be as useful. Despite the fact that @CambMA almost certainly wants to attract followers—and has over 13,000 of them as of March 2019—it is not in a competition to do so in terms of likes per tweet or followers per tweet as a business or celebrity might be.

#### **Visual Image as Focus**

I would like to emphasize my decision to look at the visual images posted on the feed. Much of the existing literature on the intersections of digital media and urban studies paints a compelling portrait of cities today as created and connected in and via virtual platforms. However, access to these networks is not necessarily stable across various cultural and linguistic boundaries. Hillier (1999) argues that effective urban planners must keep all residents and audiences in mind during the planning process. Jargon and convoluted syntax are frequent barriers that stand between a municipal

document and its audiences. Macris (2000) has developed a guide for planners with suggestions such as using active voice and avoiding complex sentence structures. Macris (2000) emphasizes that this is a major part of democratizing a public planning document. This is certainly true, but Meyer (2003) reminds us that readable text must be both easy to read and engaging to read. Do the same concerns and limitations apply to visual forms of communication? While the meaning and connotation of an image can be just as culturally dependent as an idiomatic expression, the difference in terms of access is significant. For instance, the combination of a colloquialism with a complex sentence structure may make a statement incomprehensible for English language learners, and thus inaccessible. A photograph of a city square on the other hand, even if some elements of the photograph are culturally variable, can still be accessed by English language learners and, most likely, recognized for what it is. This is not to suggest that the image can be a universal form of communication; such a suggestion would be oversimple and academically hollow. My point is not necessarily that meaning is more stable in an image, but that the access threshold to ascertain meaning, whatever it might be, is lower. Megehee (2010) states that “Nonverbal messages appear to enhance effectiveness in ways that are not achievable with words” (p. 618). In this way, the idea of a municipal feed as a visual narrative for a city is a hopeful one in that it can be more accessible (or, perhaps, less *inaccessible*) than the often densely worded, text-based master plans or mission statements commonly found on town and city websites. For this project, this hopeful view of the image was one of the inspirations for conducting an analysis only of the images posted on @CambMA. Another fact that motivated my decision to conduct a visual analysis is a simple one: the majority of tweets from @CambMA are images. Out of 2,100 tweets in one year, from August 2017 to July 2018, 1,369 of them contain an

image. Over the course of these twelve months, that comes to 65.19% of tweets. For a platform that was once known for its 140-character per tweet limit—by definition a text-based limitation—that ratio is notable.

### **Data Parameters**

My next step was to determine the parameters for gathering visual data. Zhang and Wildemuth (2009) state that “samples for qualitative content analysis usually consist of purposively selected texts which can inform the research questions being investigated” (p. 309). In order to take into account the overrepresentation of seasonally dependent tweets—e.g., frequent tweets about snow in the winter—I deemed it necessary to gather twelve months of tweeted images to form a balanced dataset. In order to gather visual tweets, a definition needed to be made for what constitutes an image-tweet. The definition of an image in the context of this study is any static image file that is attached to the tweet. It could constitute the whole tweet or accompany some text. A tweet that does not meet this definition would be one that consists only of typed text, including emojis or other such symbols, with nothing else accompanying it. A video clip or GIF does not fit into either of these two categories; these tweets were excluded from the visual analysis as well. Repeat image posts were counted as individual posts, even though some images may be more likely to be reposted than others.

### **Genre Frameworks and Image Types**

Before coding the images on @CambMA, trial visual analyses were conducted to develop some early genre frameworks. Berger (2012) outlines several examples of visual genres and subgenres, among them photography, cartoon, tattoo, typography, advertisement, and illustration. These distinctions, along with Berger’s emphasis on form over content, provided a foundation for my approach. A pilot micro-study was

conducted on a small sample of tweets from @CambMA and @CambridgeCRA (the Twitter account for the Cambridge Redevelopment Authority) in order to identify the forms and themes that could be considered genre moves of the municipal Twitter feed and to develop ideas for a codebook. Some of the forms identified in this micro-study included: photograph, simulation, map, infographic, composite (multiple images next to each other), and superimposition (images or text on top of each other). Some of these forms observed early on became part of the final codebook, while others were combined with others or rephrased. The final four forms are the broadest categories into which images can be placed while maintaining separation between each category. In this case, a form refers to the visual way in which content is delivered, taking into account the method of image capture or creation, how the image is composed or organized, and so on. These formal categories became tools of qualitative genre analysis. Table 1 below provides examples for each of the four forms.

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Table 1

*Example visual styles categorized as Form 1, Form 2, Form 3, and Form 4.*

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Image form	Example
Form 1: Photograph	<ul style="list-style-type: none"><li>• Photograph of a person or object</li><li>• Photograph of a scene</li><li>• Aerial photograph</li><li>• Mosaic of photographs</li></ul>
Form 2: Rendering/Representation	<ul style="list-style-type: none"><li>• Three-dimensional rendering</li><li>• Virtual reality screenshot or image</li><li>• Illustration</li><li>• Drawing</li></ul>
Form 2: Diagram/Data Visualization	<ul style="list-style-type: none"><li>• Map</li><li>• Data visualization</li><li>• Chart/graph</li><li>• Table</li></ul>
Form 4: Text-image composite	<ul style="list-style-type: none"><li>• Screenshot of a digital interface</li><li>• Image of a document</li><li>• Text/image combination</li><li>• Logo/icon</li></ul>

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I also identified two themes through a second, more in-depth micro-study that analyzed ten weeks of visual tweets by @CambMA. These themes are tools of qualitative content analysis as well; this study uses referential units, one of five specified by Krippendorff (1980) for content analysis (as cited in Frey, 2000). Referential units include physical and temporal units such as people, events, topics, places, etc. Accordingly, this second micro-study focused less on form and more on content. In contrast to the four forms, the two themes refer to what the image is presenting to the viewer. Theme 1 refers to the cityscape; images in this category typically provide viewers with a sense of scope and urban setting. These images may not present the entire “whole” of the cityscape, but they often invoke it. Other words and phrases related to Theme 1 include: city-space, context, environment, geography, landscape, scene, and stage. Many



of these words and phrases dovetail with theoretical lenses of urban “imageability” in Lynch (1960). For the coding purposes of this study, Theme 1 includes artifacts such as photographs of public spaces, images of skylines, maps, and renderings; it excludes artifacts such as photographs with people or objects as focal points. On the other hand, Theme 2 refers to the components of the cityscape, the things that inhabit or make up the larger place. These components may be tangible or intangible. Word and phrases useful in thinking about Theme 2 include: character, component, element, player, subject, and unit. It is important for me to clarify that these two themes are not the same as content topics. For example, an image could fall under the topic of “climate” or “public works” for both a portrait photograph of a worker or a map of streets with a parking ban. In terms of theme, the photograph of a person and the map fall into different categories, as shown below in Table 2.

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Table 2

*Example content and information categorized as Theme 1 and Theme 2.*

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Theme 1: Cityscape	Theme 2: Component
<ul style="list-style-type: none"> <li>● Environment</li> <li>● Weather/climate</li> <li>● Architecture/building exteriors</li> <li>● Public spaces</li> <li>● Nature scene</li> <li>● Development/construction</li> <li>● Transportation/transit</li> <li>● Utility/public works (large scale)</li> <li>● Systems (small scale)</li> </ul>	<ul style="list-style-type: none"> <li>● People and culture</li> <li>● History</li> <li>● Building interiors</li> <li>● Community resources/events</li> <li>● Customs/values</li> <li>● Technology/education/arts</li> <li>● Recreation/leisure</li> <li>● Utility/public works (small scale)</li> <li>● Systems (small scale)</li> </ul>

---

Ultimately, a taxonomy matrix was developed that yielded eight individual codes—which I call “image types”—that are easily referenced by a numerical signifier based on theme and form, e.g. 1.1, 1.2, 2.1, 2.2, etc. The matrix yields a total of eight

different image types through the intersection of four different forms and two different themes. The final code taxonomy is shown below in Table 3.

Table 3

*Image type matrix with the eight image types used for coding @CambMA and creating the five image-based survey questions.*

Theme	Form 1: Photograph	Form 2: Representation	Form 3: Data Vis.	Form 4: Text-Image
Theme 1: Cityscape	1.1 Cityscape via Photographic Image	1.2 Cityscape via Rendering/ Representation	1.3 Cityscape via Diagram/Data Visualization	1.4 Cityscape via Text-Image Composite
Theme 2: Component	2.1 Component via Photographic Image	2.2 Component via Rendering/ Representation	2.3 Component via Diagram/Data Visualization	2.4 Component via Text-Image Composite

Apkon (2013) states that as “you tell a good visual story, you are creating a mysterious chain of events in the viewer’s mind with every electronic visual choice you make, and the final truth and beauty of it depends largely on the degree of literacy brought to its creation” (p. 31). As @CambMA is telling a visual story, the question arises about the “degree of literacy” that it brings to the feed. One way of looking at this degree of literacy is through the image type matrix and through the intersections of the coding data and the survey data.

### **Coding the Dataset**

After the matrix/codebook was developed, the full dataset had to be assembled. Twitter allows users to scroll down to see old posts, but only to a point. The current user interface makes use of the continuous scroll (as opposed to numbered pages with a

certain number of tweets per page) but eventually the user will reach an end of the feed, even though older tweets still exist. I was not able to view a full year of tweets on the current Twitter interface. Older tweets are available for viewing, but the user must find a separate “tweet viewer” and type in the name of the account. I used OmniCity Tweet Viewer and searched for @CambMA. OmniCity presents tweets on numbered pages, with 100 tweets per page. However, only the plain text for each tweet is viewable; images are not. To see if a tweet has an image, the user needs to click on either the URL for each tweet or the timestamp hyperlink, either of which will open the tweet as it originally appeared on @CambMA, with all content included, in a new browser tab. I opened all tweets posted in August 2017 through July 2018. Tweets that did not meet the criteria for a static image were discarded; all tweets that met the criteria were captured via the screenshot keyboard function. Out of the 2,100 tweets posted in August 2017 through July 2018, 1,363 of them contained static images. These tweets became the dataset to be coded. Tweets were coded using the desktop-based program TagSpaces. TagSpaces allows users to view folders and files on their hard drives and tag them with customized codes. All tweets were coded according to the image type matrix. No tweets were coded twice. Images that appeared to be “borderline”—i.e., not clearly Type 1.1 or Type 2.1, were flagged to be coded later. After all other tweets were coded, these images were then reassessed and coded in a single session to ensure that these “difficult” tweets were coded in a consistent way. Typically, the challenges involved deciding between Theme 1 or Theme 2. Forms are more obviously separate, but where exactly the cityscape ends and its components come into focus can sometimes be difficult to judge. Once all tweets were coded, the counts for each image type were ready for analysis.

## **Developing the Survey**

The second phase of research consisted of a survey, which is attached as Appendix A. Several questions on the survey were developed such that they presented to respondents the full variety of image types in the taxonomy matrix. This survey was written after the development of the image type matrix but before the coding of @CambMA in order to prevent the coding data from impacting the construction of the survey, especially in the form of confirmation bias. I posted the first survey batch on 12 December 2018 and the final survey batch on 28 January 2019. I coded the full year of tweets from @CambMA throughout February 2019. The survey was never designed to exist in a vacuum. Its purpose was to shed light on what people who have spent a substantial or significant amount of time in the urban Northeast would expect from a municipal social media feed. Considering much of the literature in urban planning and digital citizenship stresses the frequent gulfs between municipality and resident, it seemed that a study of @CambMA on its own would be insufficient in understanding the genre ecology of municipal Twitter feeds. I designed the survey questions to learn more about the intended audience of municipal social media. This means that the questions focus not on the behavior of residents but on the ideas they hold—what Hughes and Hayhoe (2008) call the “attitudes” or “feelings” of a sample population (pp. 95-96). For my research, which is about how towns cities communicate with residents through Twitter, these are the questions that made sense to ask.

The only requirements for respondents to be eligible for the survey were to be eighteen years of age or older and to live or have lived in or near an urban area in the Northeast United States, the principal cities of which being Boston, New York, Philadelphia, Baltimore and Washington D.C. This study was not limited to only those

who have lived in or near Cambridge. As previously noted, Cambridge is an integral part of the Northeast Megalopolis, which can be viewed as a single, if varied, urban entity. While each city in this region certainly has its own distinct idiosyncrasies and unique attributes (just consider how upset a Bostonian and a New Yorker would be at the suggestion that they live in identical urban settings), it is undeniable that these cities are linked in profound ways, among them elements and networks of economy, community, culture, commuting, politics, migration, demographics, etc. Due to its density of colleges and universities, Greater Boston also has a relatively transient population, meaning that the area is constantly welcoming new residents. For these reasons, the survey was open to those who have spent significant time in the urban Northeast.

I created five image-based questions for all respondents to take. Survey images were from all months of the year. Respondents were asked to select images that best suited a given context or application; specifically, they were asked to identify three images out of eight that best fit a purpose specified by the question. The text of each question also reminded respondents to choose images *based on their style and form, rather than content alone*. While the questions are not comprehensive, of course, they address the most common practical reasons someone would visit a feed in terms of the functional capacity of images. The five questions were meant, collectively, to capture: the majority of purposes any municipal feed would have, the reasons people would visit a municipal feed, and the reasons people would find its images effective or ineffective. The five questions are provided in full in Table 4 below, along with a tag word, which I will use to refer to each question from this point on.

Table 4

*Full text of survey questions with corresponding question type tag words.*

Question type (tag word)	Survey question text
<i>Essence</i>	What three styles are best suited to show the essential qualities or characteristics of a city in the urban Northeast?
<i>Profile</i>	What three image styles would make the best “profile pictures” for a city’s social media in the urban Northeast?
<i>Visit</i>	What three image styles would be most effective in convincing people to come to a city in the urban Northeast?
<i>Event</i>	What three image styles would work best to accompany a city announcement or initiative?
<i>Desire</i>	What three image styles best fit what you would like to see on a city’s Twitter feed?

The images for the five image-based questions were extracted from the Twitter feed using the screenshot tool. Only the images were extracted from each tweet for the purposes of the survey. When survey participants encountered each image, they were doing so without the context provided by the textual content of a tweet; any text that participants read was part of the image attached to the tweet, as opposed to the plain text that makes up the character-limited text portion.

I wrote filtering questions for both the Qualtrics survey and the survey portal in MTurk to ensure that only those who had spent significant time in the urban Northeast would take the survey. An additional filtering question was used to identify respondents who were also familiar with Cambridge. Both surveys contained the same images; the wording of the image-based questions was changed only for the sake of survey

consistency and clarity for every respondent. Respondents who were familiar with Cambridge were asked two additional questions specific to Cambridge.

### **Administering the Survey**

I created the survey in Qualtrics and then posted the survey link on Amazon Mechanical Turk (MTurk). This meant that Qualtrics collected the survey data but that survey respondents and compensation were managed entirely in the MTurk interface. As part of Amazon Web Services, MTurk is a marketplace for Human Intelligence Tasks (HITs). Researchers can post questionnaires, surveys, or other activities that a specified number of workers will complete for compensation. Samuel (2018) reports that more and more academic researchers are using MTurk. There are several reasons for this, among them that “online respondents are more representative than other comparable affordable sources” and that the resulting “availability of a conscientious, diverse, non-student source of survey respondents has led to something of a golden age in survey research” (Samuel, 2018). The biggest concern most researchers have when considering the use of services like MTurk comes down to an ethical one: making sure that respondents remain anonymous and that respondents are compensated. For my survey research, no respondent names were ever recorded. The only identifying information gathered consisted of Worker IDs, which are alphanumeric codes assigned by the MTurk program. Every worker received \$1.00 for completing the survey, which translates to \$12.00 per hour assuming a survey completion time of five minutes. The average time spent on the task was 5 minutes and 9 seconds, as recorded in the MTurk portal. Respondents ultimately received compensation by entering a code (provided by Qualtrics at the successful conclusion of the survey) in a specific box in the MTurk program. I then paid respondents if the code they entered matched with the code generated by Qualtrics.

This precaution, along with a CAPTCHA check at the beginning of the survey, addressed any concerns I had about online “bots” taking the survey. I posted surveys in varying batch sizes at different times of day between 12 December 2018 and 28 January 2019. All survey data were gathered in Qualtrics. I analyzed some of the data using analytical and statistical functions in Qualtrics and some of the data in spreadsheet applications such as Google Sheets and Microsoft Excel. In total, 150 responses were collected, yielding an 8% margin of error at a 95% confidence level. These numbers remain unchanged whether applied to a population the size of Cambridge or of the entire urban Northeast.



## CHAPTER 4

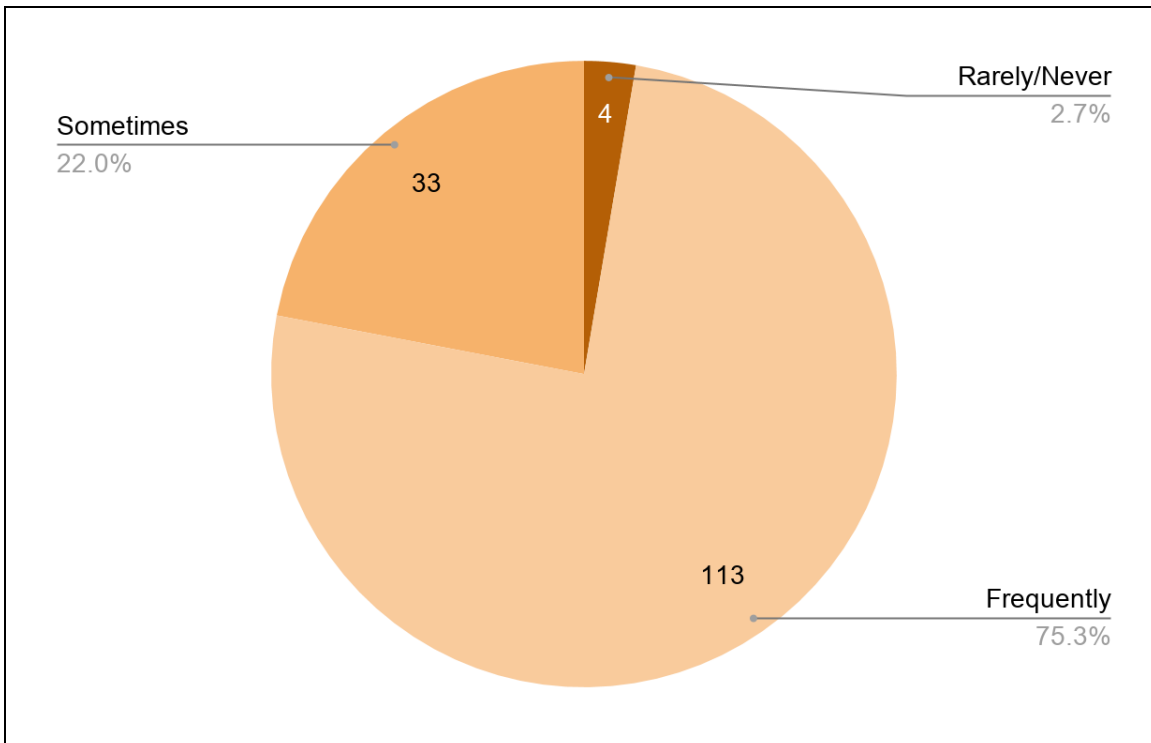
### RESULTS

The survey results indicate what people who have spent significant time in the urban Northeast think are the best applications for image types in certain contexts. This analysis does not try to suggest what the perfect ratio of image types should or might be; instead, it seeks to understand how survey respondents view the applications of each image type and to compare the results of the survey with the results of coding tweeted images from @CambMA.

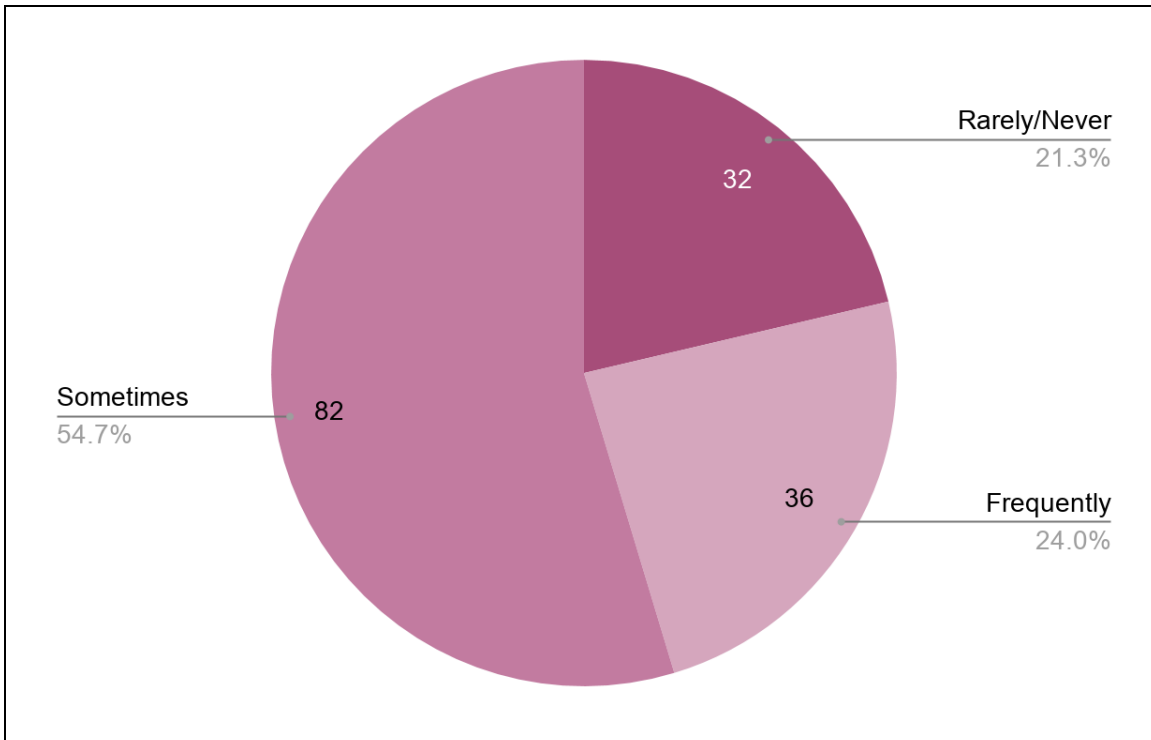
#### **Social Media Use**

Figure 3 below shows the breakdown for how often survey respondents use social media. As the pie chart shows, 75.3% of respondents reported being frequent users of social media platforms such as Twitter, Facebook, etc. The Pew Research Center (2018) reports that “around seven-in-ten Americans use social media to connect with one another, engage with news content, share information, and entertain themselves.” That statistic is a close match with survey respondents who reported being frequent users. Considering that another 22% of survey respondents reported that they sometimes use social media, it appears that survey respondents are above-average users of social media. In Figure 4, Only 24% of respondents reported accessing social media posted by towns, cities, or other governmental organizations frequently (multiple times per week), but over 50% of respondents reported accessing such media sometimes (a few times per month). This is not surprising considering that the survey was conducted through Amazon Mechanical Turk, a digital marketplace, which could be more likely to attract workers who use digital technology on a regular basis. Whether or not @CambMA is

specifically trying to reach those already on social media as opposed to those who rarely or never use social media is a line of inquiry that warrants further research.



*Figure 3.* The number and percentage of survey respondents who reported that they use social media frequently, sometimes, rarely, or never.



*Figure 4.* The number and percentage of survey respondents who reported that they use municipal social media frequently, sometimes, rarely, or never.

### **Aggregate Image Type Results**

The survey also asked whether or not respondents were familiar with the City of Cambridge, Massachusetts. The purpose of this question was to see if there would be any significant difference in overall results, especially in terms of responding to questions about image types, between “Cambridge” respondents and “rest-of-the-Northeast” respondents. Of the 150 total survey respondents, 32 of them (21.3%) reported having spent significant time in Cambridge. There were no substantial differences in the image-based questions, proportionally speaking, between the data from “Cambridge” respondents and “rest-of-the-Northeast” respondents. In general, the results for both cohorts of respondents are roughly proportional.

The preference of respondents for certain image types did vary between questions, but I will start by looking at the aggregate results from all image-based questions. Even though the difference between asking respondents which images best capture the essence of a place and which images they want to see on a feed is a substantial one, the aggregate data for all five questions types still reveal general image preferences. Each question asked respondents which image is “good at” or “best at” doing something. As the data show, the popularity of some image types is strong across the five different questions. The overall preferences of survey respondents can be summed up with three observations: respondents selected photographic images more than other forms, respondents selected images of the cityscape more than images of its components, and, by the largest margin, respondents selected representational images of the cityscape over representational images of its components. The popularity of the cityscape aligns with the ways in which cities have been portrayed and viewed in narratives and art. Architecture critic Robert Campbell observes that “cities are made, above all, of collections of buildings” (Campbell, 1985, p. vii). The cityscape, with its sweeping scope, engages viewers in ways that its individual components do not. The cityscape was the most selected theme and the photographic image was the most selected form, making Type 1.1 (cityscape via photograph) the most popular type of image. However, despite Form 1 being the most popular selection, Type 1.2 (cityscape via representation) was the second most selected (Figure 5).

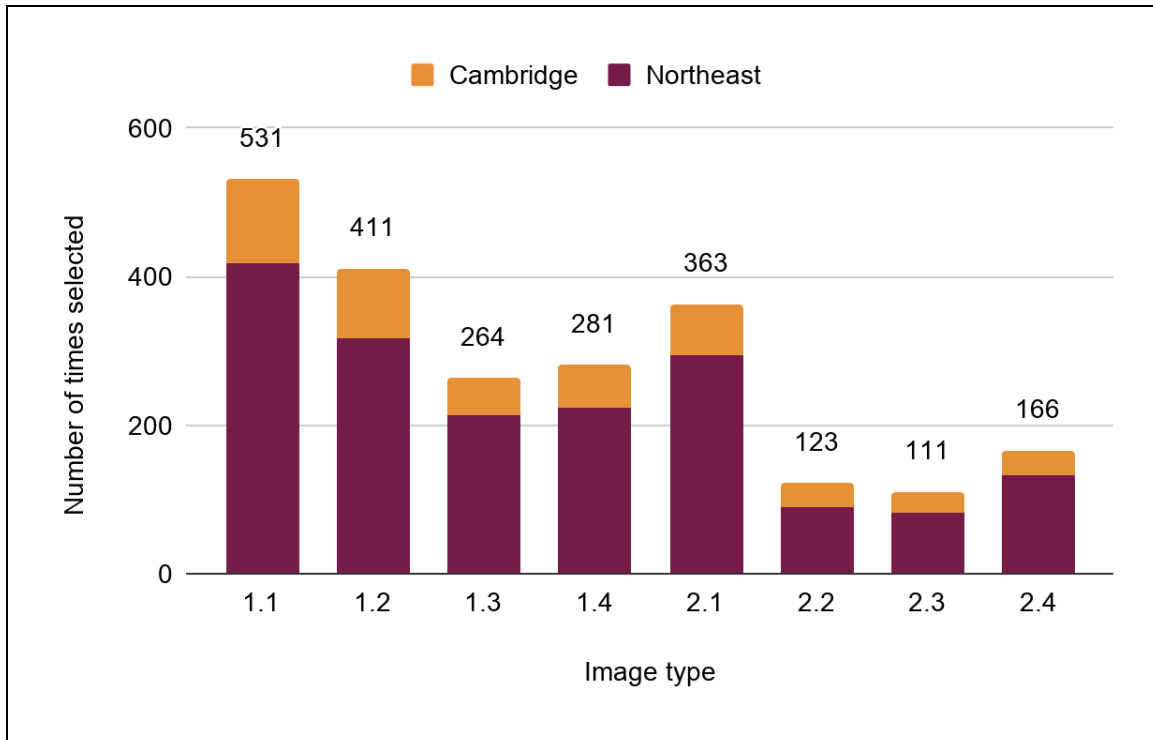


Figure 5. The total number of times an image type was selected by survey respondents. Out of 150 total survey respondents, 32 (21.3%) had spent time in Cambridge.

### Images of the City

Breckman (2010) observes how people “love vantage points from which they can take in the city” (p. 177). This practice is not new, even if the tools to preserve the experience have evolved; “Renaissance painters imagined the city from on high, in a celestial view that no human eye had yet achieved. Technology eventually caught up to this desire” (p. 178). Breckman (2010) continues to distill this idea: “The god’s-eye perspective is the ultimate expression of the human desire to make the city visible, to see it in a glance, to read it as an intelligible and unified object” (p. 178). An aerial image “restores to us our sense that cities are continuous fabric” (Campbell, 1985, p. vii). Figure 6 below is an example of one of the most popular images from the survey.



*Figure 6.* An example of a Type 1.1 image (cityscape via photograph) posted by @CambMA (City of Cambridge, 2017, October 18). This was one of the most selected images for the question about what image type would make the best profile picture for a municipal social media feed.

In the context of @CambMA, Type 1.2 (cityscape via representation) is almost always a three-dimensional rendering or a minimalist outline with strong overtones of modern graphic design. The survey data suggest that the form of the representational image complements the content of the cityscape. Without the cityscape as its subject, the representational image does not appear to engage the survey respondents very much. What is it about the combination of form and content in terms of the representational and the cityscape that would be so appealing? Three-dimensional renderings and graphic design are the visual vernacular of architecture and urban planning. They provide a glimpse of what *could* exist. Any representational image can provide a glimpse of this, but the difference of scale is important. Representational images of the components of the city could include a drawing of a historical moment, a painting of one of the city's residents, an illustration of people engaged in a particular activity or hobby, etc. These images are important, but they do not convey the sense of potential of what an entire

place might become for many people in the way that a rendering of a building, skyline, or city square does. Seeing the possible future on such a large scale is arresting; it is no coincidence that searching on Google for images of the future (which are almost always urban in their focus) yields countless panoramas of skylines, aerial perspectives, neighborhood layouts, and open, public spaces. These images have power.

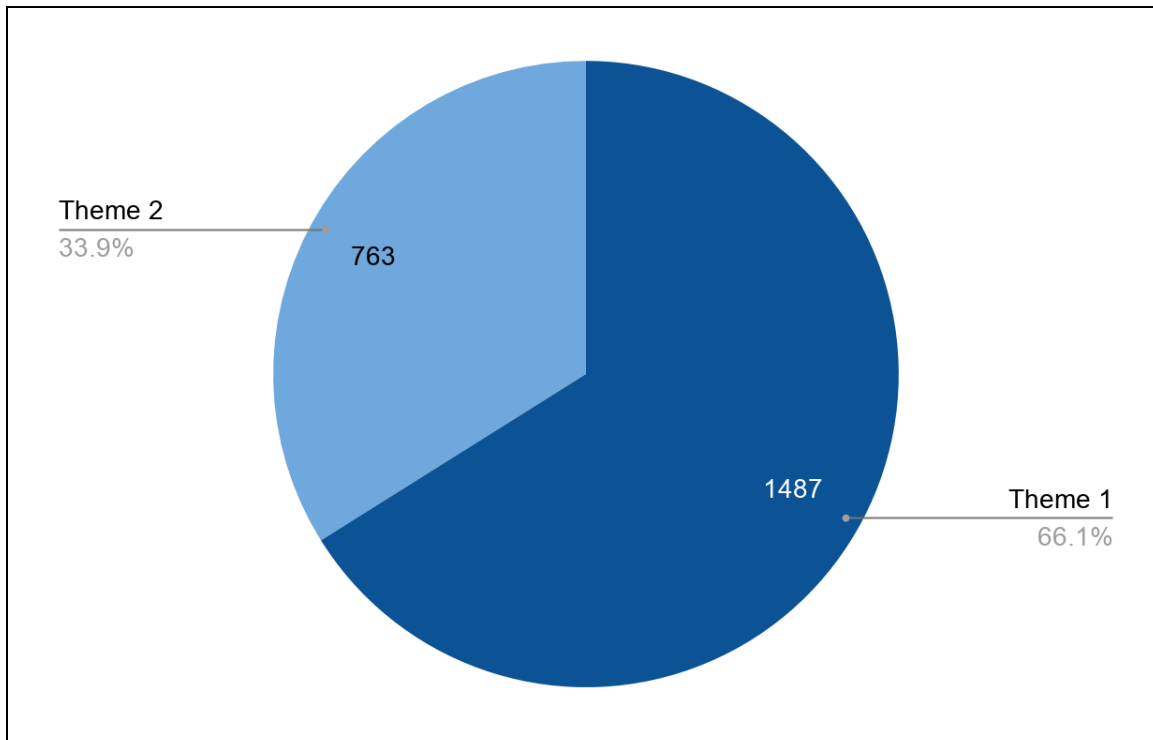


Figure 7. The number and percentage of times a Theme 1 image or a Theme 2 image was selected by survey respondents.

### Capturing the Cityscape

The results from the *Essence* question (What three styles are best suited to show the essential qualities or characteristics of a city in the urban Northeast?) and the *Profile* question (What three image styles would make the best “profile pictures” for a city’s social media in the urban Northeast?) further clarify some initial observations and trends (Figure 8 and Figure 9). Figure 7 above shows that respondents overwhelmingly selected Theme 1 images as those that best capture the essence of the city. Theme 1 tops Theme 2

in every form for this question, with the single exception of Type 2.1 (component via photograph) over Type 1.3 (cityscape via data visualization). This is not surprising as a cityscape, given its scope and scale, best captures the essence of a place. In terms of form, a photograph or rendering would capture the essence of a place more than a map or diagram (Figure 8). Type 1.1 (cityscape via photograph) was selected more often for the *Profile* question than for any other (Figure 9). It is interesting to note that a social media profile picture has almost become synonymous with a picture of a person, but that when it comes to a platform for a city, the photograph of a cityscape becomes the best equivalent. The results for *Profile* are similar to those for *Essence*, suggesting a connection between the two, perhaps that survey respondents felt it is the job of a profile image to capture the essence of the subject—at least when it comes to municipal accounts.

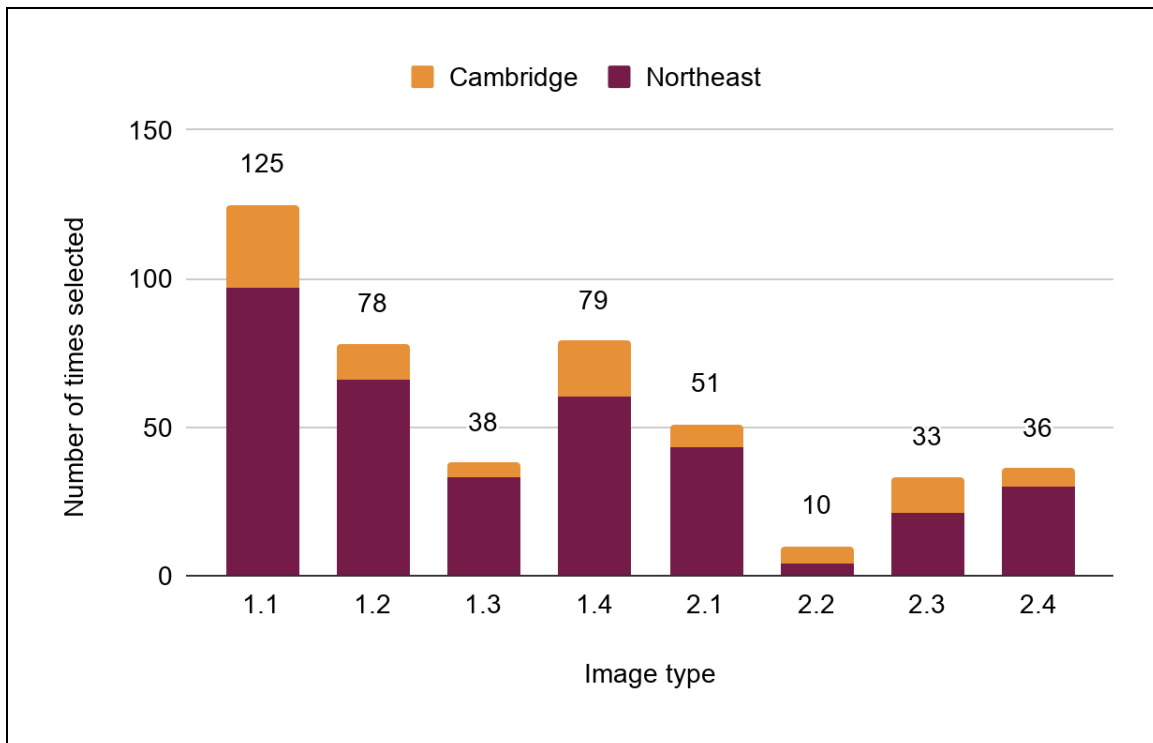


Figure 8. The number of times an image type was selected by survey respondents for the question about what image type best captures the essence of the city. Out of 150 total survey respondents, 32 (21.3%) had spent time in Cambridge.



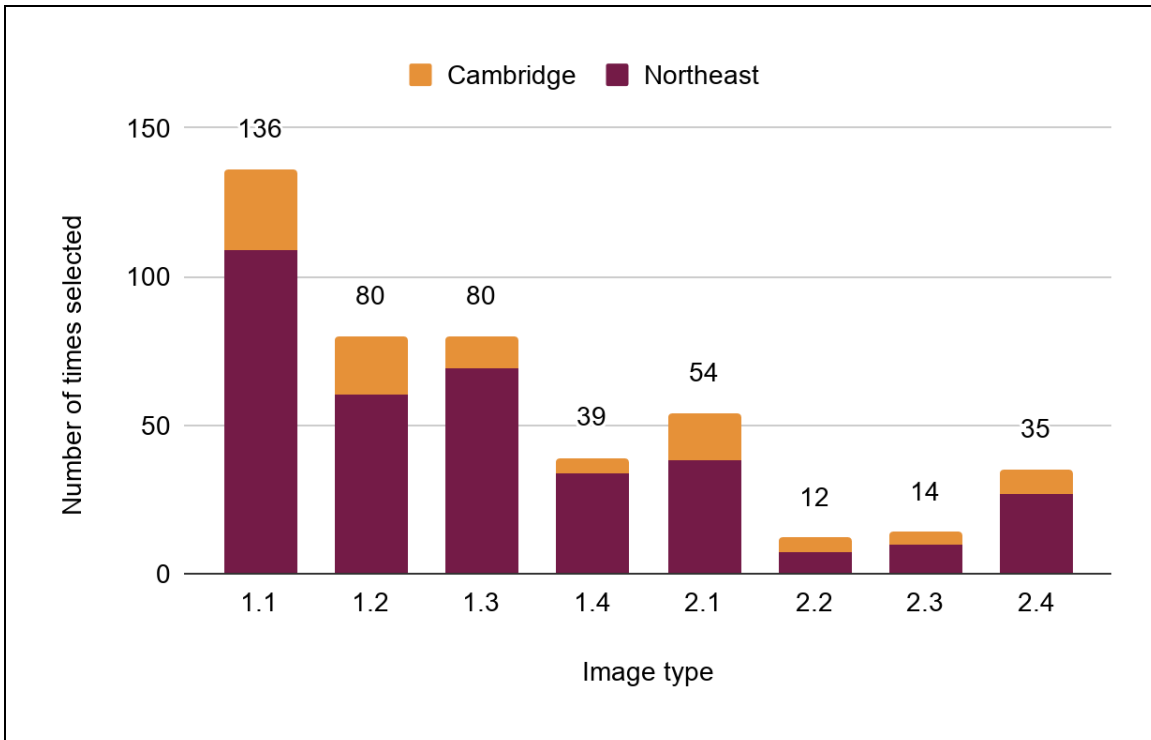


Figure 9. The number of times an image type was selected by survey respondents for the question about what image type would make the best profile picture for a municipal social media feed. Out of 150 total survey respondents, 32 had spent time in Cambridge.

### Images as Announcements

As stated previously, looking at the combined survey data is useful in determining general selection popularity, but it can mask some of the differences between questions. The *Essence* question results match relatively well with the total count results, but each of the other questions—*Event*, *Profile*, *Visit*, and *Desire*—yielded data that elucidate some of the subtler connections between theme, form, genre, purpose and audience in this social media ecology. This is important because we need to remember that the effectiveness of a given image type is tied to why someone might be accessing a social media feed or tied to the purpose of the post in the context of the feed. For example, Type 1.1 (cityscape via photograph) was the most selected image type across all questions, except for the *Event* question (What three image styles would work best to accompany a

city announcement or initiative?) (Figure 10). Type 1.1 is still the third most selected image type, but the data for this question are unique.

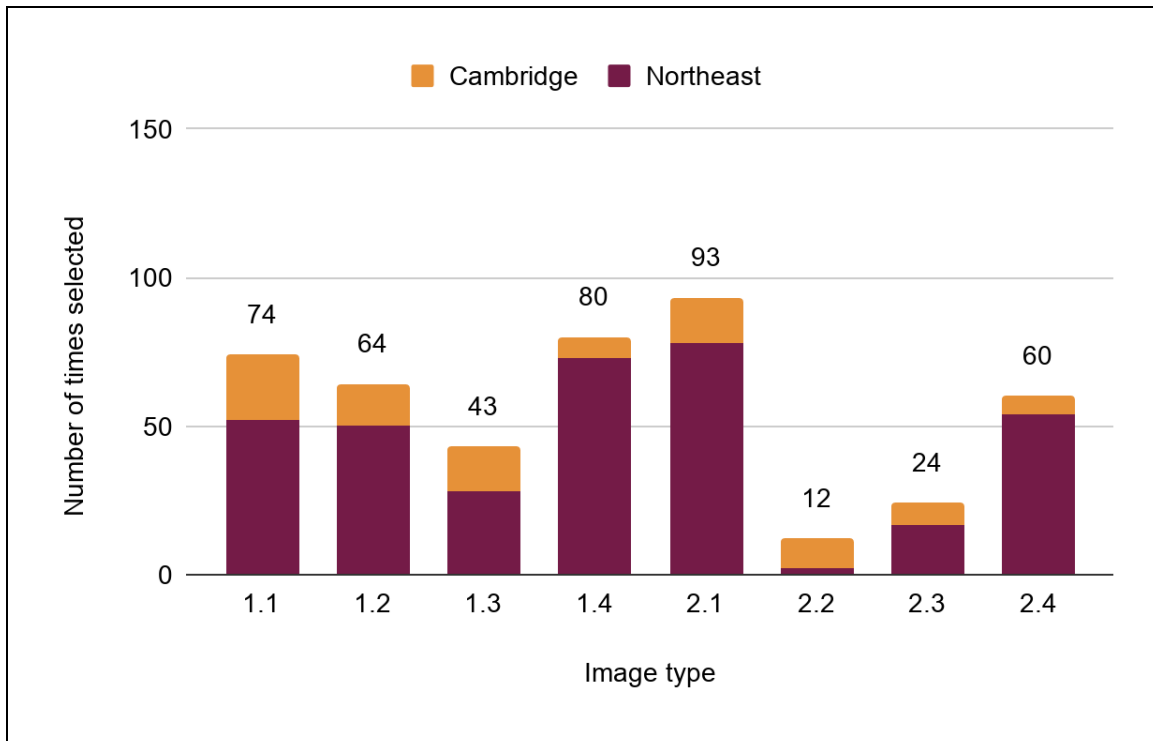


Figure 10. The number of times an image type was selected by survey respondents for the question about what image type would best accompany an announcement for an event or initiative. Out of 150 total survey respondents, 32 (21.3%) had spent time in Cambridge.

The most popular image type here is Type 2.1 (component via photograph), followed by Type 1.4 (cityscape via text-image composite) and then Type 1.1 (cityscape via photograph), which is the most selected image type in all other questions. Type 1.2 (cityscape via representation) and Type 2.4 (component via text-image composite) follow closely in count. In terms of visual communication, this makes sense. A photograph of a cityscape does not necessarily capture an event very well. Some events may be striking when seen from above or from a distance, but others may require a more personal, up-close perspective. From far away, many events may appear indistinguishable from others; it could be difficult to see the difference between the crowd for one sort of event

and then the crowd for another. In other words, many events do not primarily involve the cityscape but, rather, its components. Consider, for example, Figure 11. This image is a good example of Type 2.1 (component via photograph); the focus is on people engaging in a specific event (a running race) at a specific time (the start of the race).

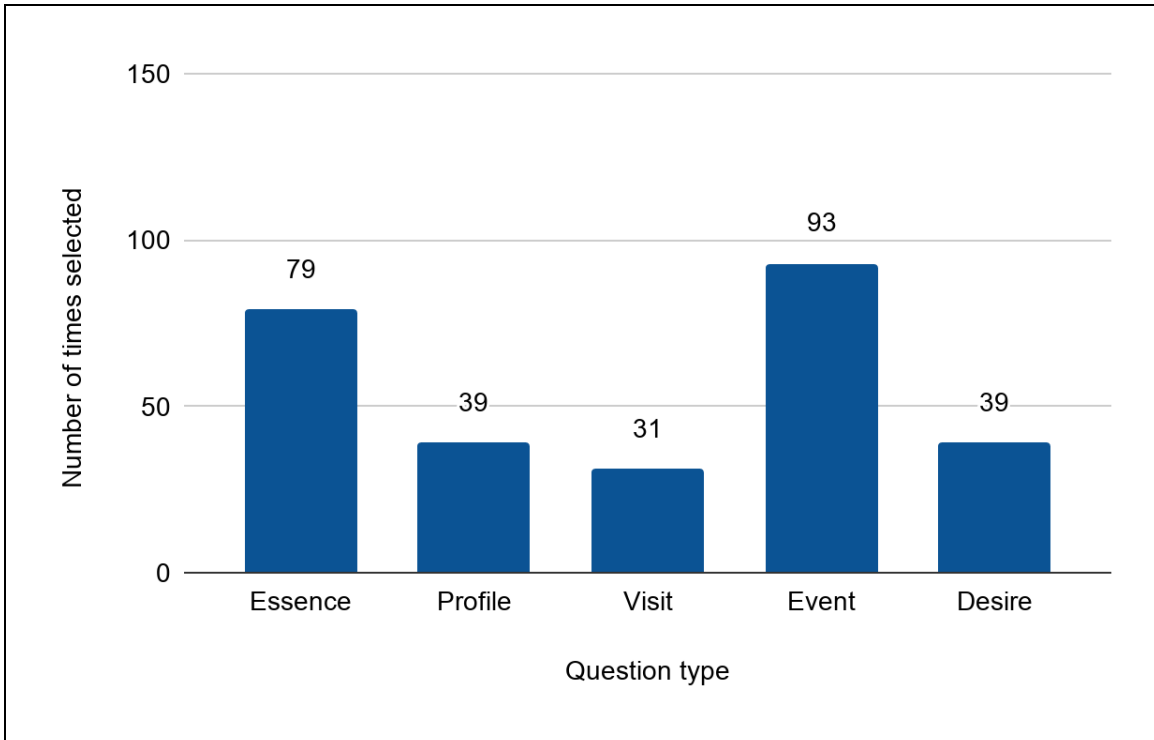


*Figure 11.* An example of a Type 2.1 image (component via photograph) posted by @CambMA (City of Cambridge, 2018, February 2). This was one of the most selected images for the question about what image type would best accompany an announcement.

This is the only question for which Type 1.1 (cityscape via photograph) or Type 1.2 (cityscape via representation) was not the most selected image. This question had the lowest count for Type 1.1 of all questions.

In terms of other image types, the relative popularity of Type 1.4 (cityscape via text-image composite) and Type 2.4 (component via text-image composite) is prominent. In fact, the *Event* question yields the highest count of any other question for both of these image types (Figure 12 and Figure 13). The high numbers for Type 1.4 and Type 2.4 suggest that the text-image composite is especially effective for announcements. The subgenre of the announcement is, in practice if not in theory, synonymous with the

text-image composite. The text specifies what is happening, along with when and where it is happening, while the image provides an example of the event or activity, perhaps from a similar event or from another date or location, e.g. last year's event.



*Figure 12.* The number of times a Type 1.4 image (cityscape via text-image composite) was selected by survey respondents for each of the five questions.

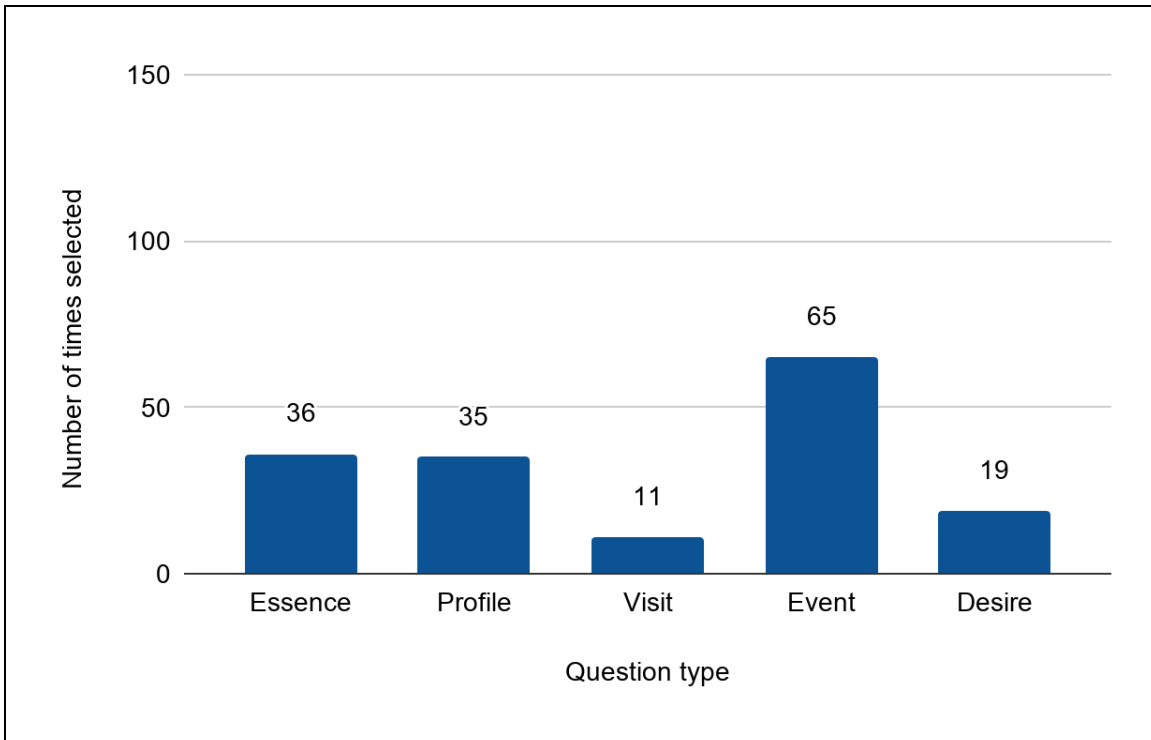


Figure 13. The number of times a Type 2.4 image (component via text-image composite) was selected by survey respondents for each of the five questions.

Even examples with relatively few details and with relatively abstract images were considered effective. Figure 14 is the Type 2.4 image for the *Event* question. The text does little more than give the viewer a directive (SAVE WATER) and then a few details about what the initiative is and where it comes from. The background image, of bubbling water, provides little context, but is an appropriate accompaniment to the text. This image type was relatively unpopular with other questions, but was selected more for the *Event* question than for any other.

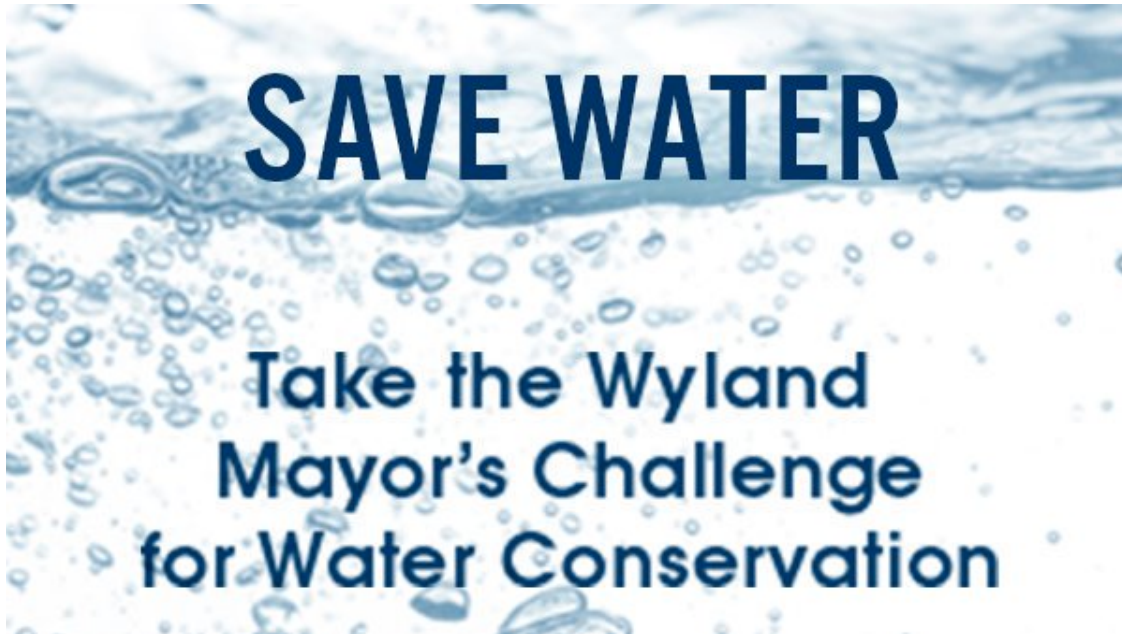
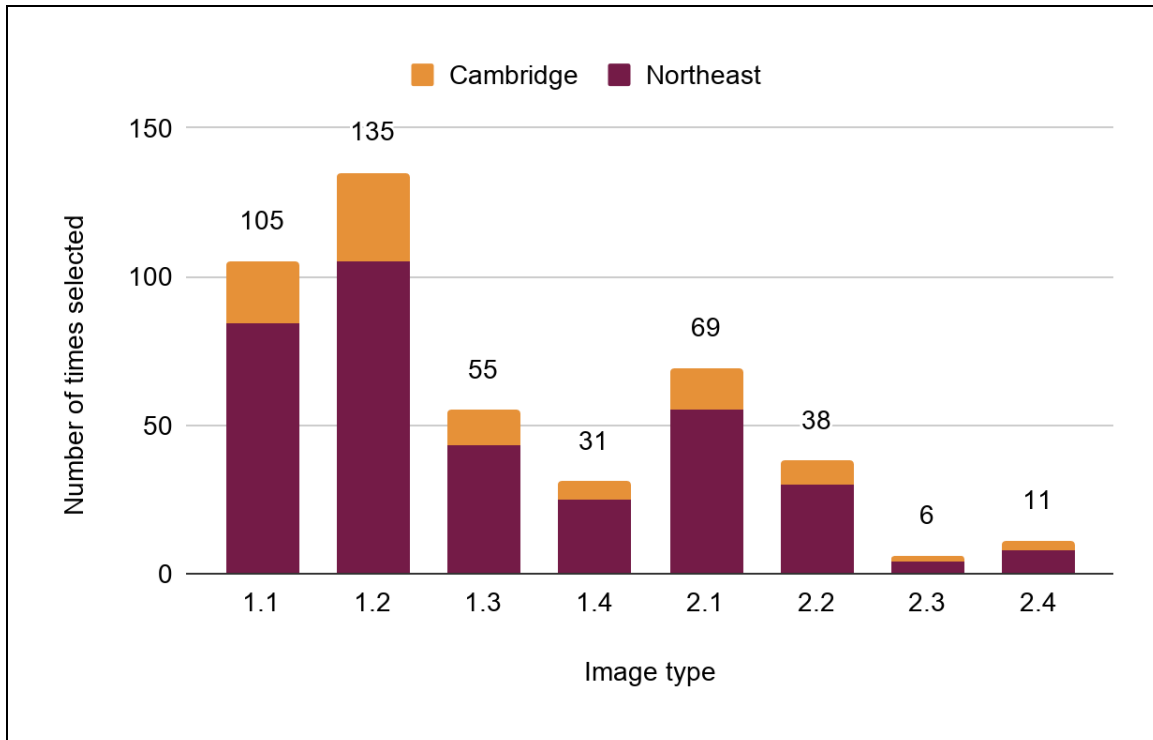


Figure 14. An example of a Type 2.4 image (a text-image composite showing components of the city) posted by @CambMA (City of Cambridge, 2018, April 5). Respondents selected this image type for the question about what image type would best accompany an announcement for an event or initiative more than they selected it for other questions. This image announced Cambridge's participation in a conservation effort organized by the Wyland Foundation (<http://www.wylandfoundation.org/p/mayors>).

### **Pull of the Urban Image**

The data for the *Visit* question (What three image styles would be most effective in convincing people to come to a city in the urban Northeast?) reveal one of the most interesting results; Type 1.2 rises above Type 1.1 (cityscape via photograph) and its count is among the highest across all questions (Figure 15). The counts for Theme 1 and for Forms 1 and 2 are the highest. While this matches the general trend, the popularity of Type 1.2 is still important. As previously noted, Form 2 is the most suited to conveying the virtual, the potential, the future, etc., and is especially well suited to portraying a cityscape. This is where the data from those who have spent time in the urban Northeast but have *not* spent time in Cambridge become an especially important part of the dataset.



*Figure 15.* The number of times an image type was selected by survey respondents for the question about what image type would be best for making someone want to visit Cambridge. Out of 150 total survey respondents, 32 had spent time in Cambridge.

Somewhat surprising is that respondents felt that this image type would be effective in drawing people to the city, as opposed to only engaging people who already live in the city. The residents of a city are the primary audience for these types of images; the potential future of the city surely impacts them more than visitors, who live elsewhere. What this data may reveal is that Type 1.2 (cityscape via representation) is simply engaging and arresting, even for those who are unfamiliar with the place for which the image is supposed to envision an alternate future (Figure 16). Perhaps respondents felt that Type 1.2 signals to visitors that the city is a forward-thinking place, with new developments on the horizon. Furthermore, the fact that respondents selected Type 1.2 as the best way to attract visitors to the city supports the idea that renderings of the virtual city can help “governments, stakeholders, and communities to be aware of the



environmental and social impacts of their decisions” if they allow the audience to consider the “what if” city (Jamie et al., 2017, p. 13).



*Figure 16.* An example of a Type 1.2 image (cityscape via representation) posted by @CambMA (City of Cambridge, 2018, February 13). This was among the most popular images in the survey.

It is also worth noting how only Type 2.1 reaches a substantial count for Form 2 images for the *Visit* question. Furthermore, the counts for Type 2.3 (component via data visualization) and Type 2.4 (component via text-image composite) are the lowest of any question. The data for this question point to an important thing for those running municipal feeds to consider. The survey data for this question offer guidance for how a municipal feed can craft visual posts in order to attract potential visitors: post renderings and illustrations of the cityscape, along with photographs of the cityscape and, to a somewhat lesser degree, of its components as well. The allure of the city for respondents seems to be a factor here as well; according to the data for this question, it is the



cityscape (the whole) and not its components (its parts, its constituents, etc.) that entice visitors. Type 1.2 was selected more than any other for the *Visit* question (Figure 17).

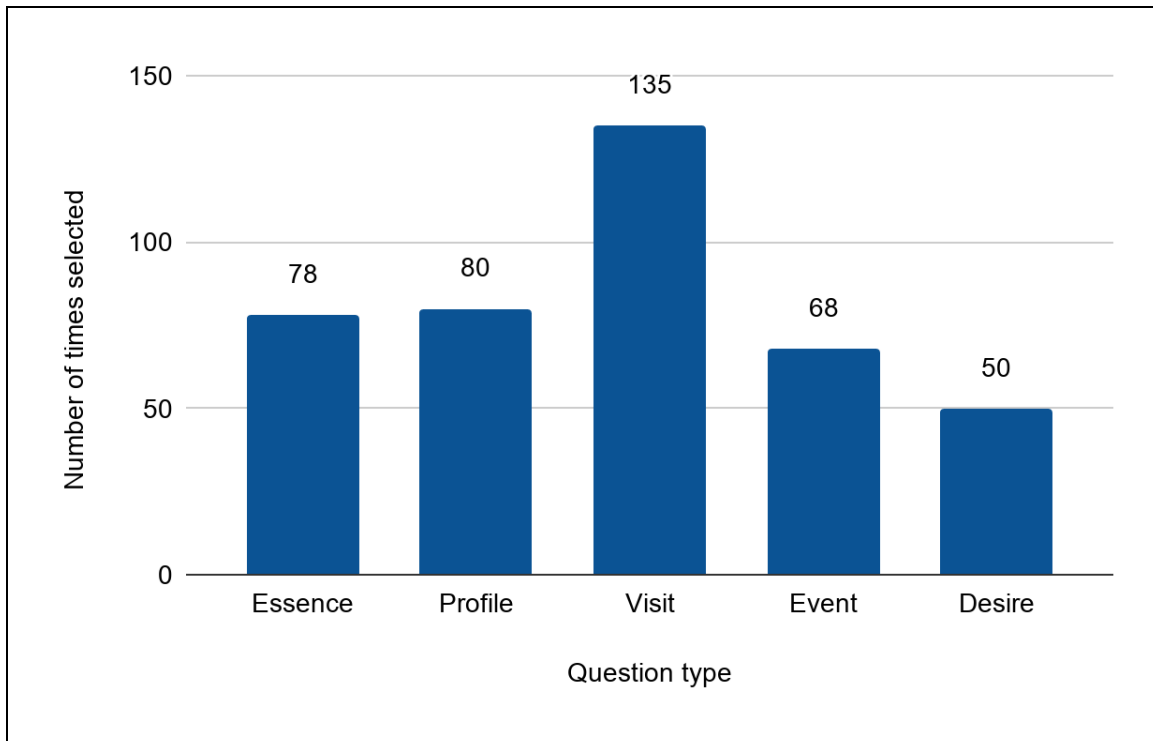


Figure 17. The number of times a Type 1.2 image (cityscape via representation) was selected by survey respondents for each of the five questions.

### What Users Want to See

Should the municipal feed gear itself to potential visitors, though? Potential visitors (or, perhaps, those who may move to the city in question) are certainly among the intended audiences of a municipal feed, but they are likely not the primary audience. The municipal feed communicates first and foremost with those who live or work in or near the city in question. Some image types may be effective in making a city look like a nice place to visit or move to, but they may not be what those who live or work in the city want or need to see (though it may make residents feel proud to call a city home). Some respondents may interpret the *Visit* question to be more about what makes a city look attractive. In that case, the Type 1.2 is not only effective for potential visitors but for

current residents as well, provided it can make residents feel a sense of pride in the place they call home. Still, in terms of what survey respondents want to see on a municipal feed, things change. The shift from what will engage a visitor to what those who already spend or have spent time in the city want to see is demonstrated below in Figure 18.

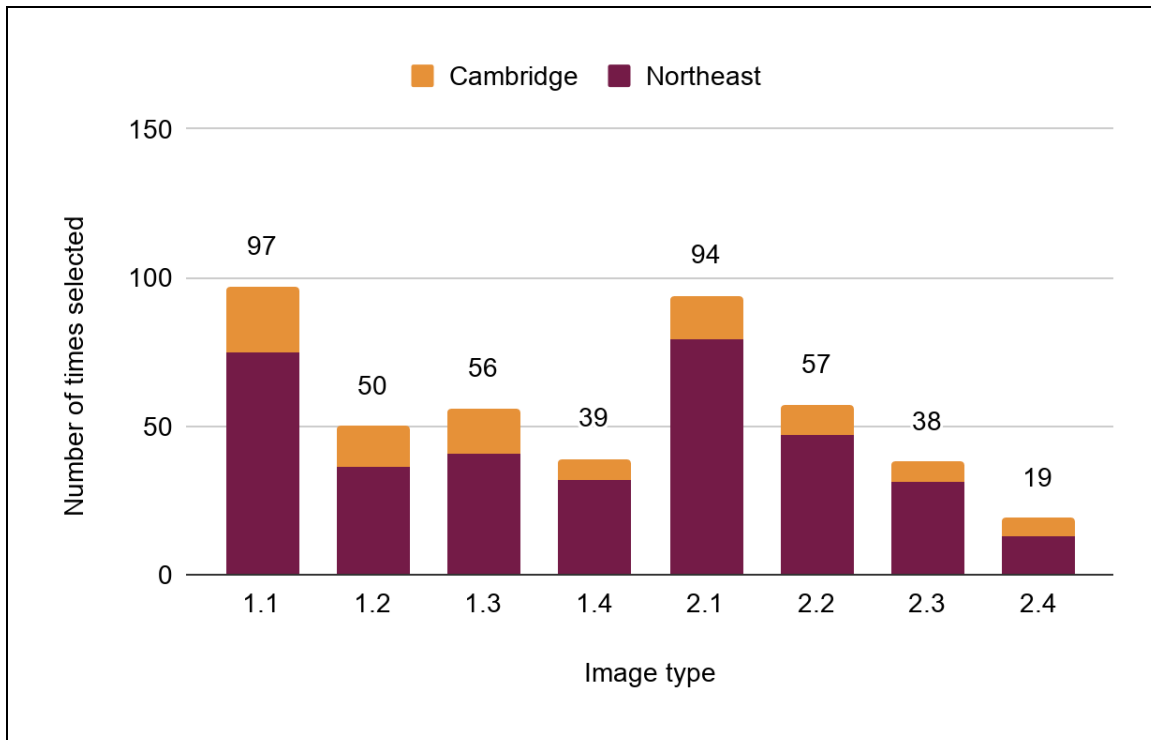


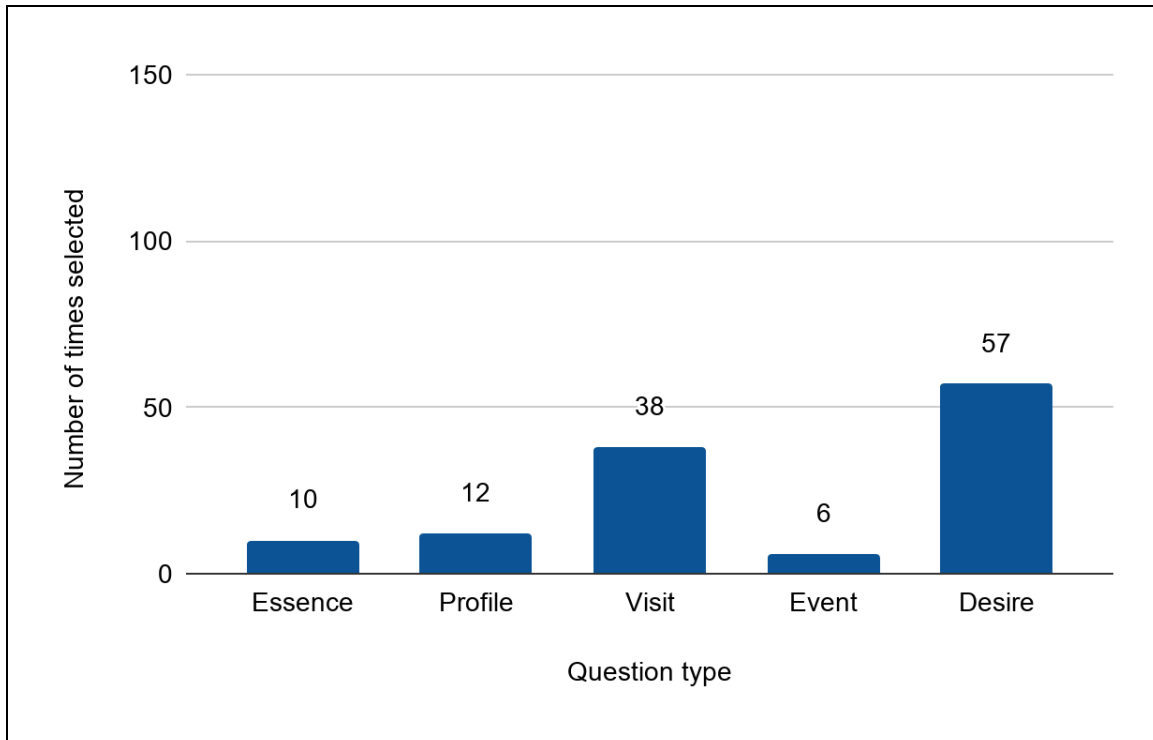
Figure 18. The number of times an image type was selected by survey respondents for the question about what image type they would want to see on a municipal social media feed. Out of 150 total survey respondents, 32 (23.1%) had spent time in Cambridge.

Here we see that respondents only slightly favor Theme 1 and in terms of Form 2, respondents selected Type 2.2 (component via representation) more for this question than for any other question. Compared with the data from other questions, the responses to the *Desire* question (What three image styles best fit what you would like to see on a city’s Twitter feed?) are also more balanced across the image types. This may mean that respondents simply want to see a variety of images, even if they prefer some images over others for specific purposes. The specific Type 2.2 image (Figure 19) warrants further

discussion. It is a scanned image of a painting depicting a colorful and festive community scene, one that stands in juxtaposition to many of the contemporary cityscapes, which often feature steel, machinery, concrete, pavement, etc. This image, posted along with text announcing a celebratory event for Black History Month, evokes notions of race, heritage, and history in ways that other cityscape images do not. Perhaps these differences in both visual style and content are what made it the most selected Type 2.2 image for respondents.



*Figure 19.* An example of a Type 2.2 image (component via representation) posted by @CambMA (City of Cambridge, 2018, February 16). Respondents selected this image type for the question about what image type they would want to see on a municipal social media feed more than they selected it for other questions. This image is a cropped portion of the work *Gullah Christmas* by Diane Britton Dunham.

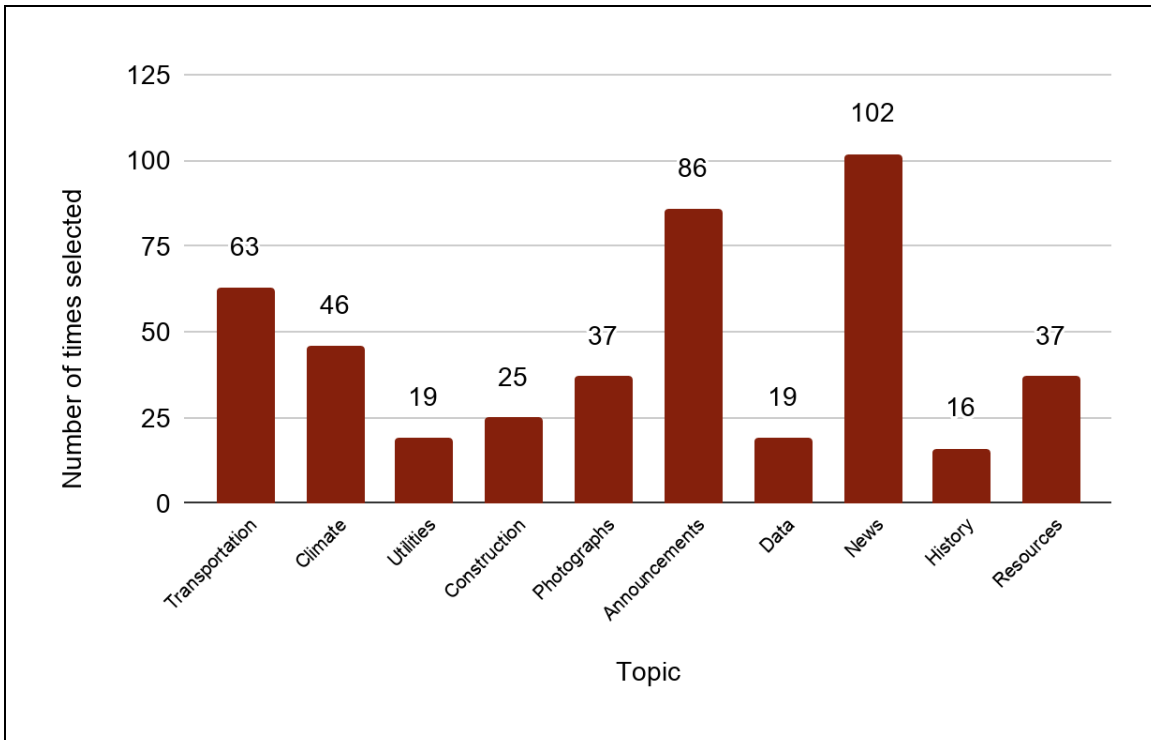


*Figure 20.* The number of times a Type 2.2 image (component via representation) was selected by survey respondents for each of the five questions.

Figure 20 above shows that Type 2.2 (component via representation), in general, was an unpopular choice. It was not considered a good image type for capturing the essence of the city, for functioning as a profile picture, or for announcing an event. Interestingly, however, it is one that respondents want to see a little bit more of, even if it may not fulfill a particular functional role. Why? Type 2.2 would consist of illustrations, renderings, drawings, etc. of a city’s people, its practices, its moving parts, its history, and so on. Perhaps without these images, a municipal feed feels too sterile; without Type 2.2, respondents may feel that the city seems far away, less focused on people (even with photographs of people being part of the popular Type 2.1), less focused on art (Type 1.2 mostly consists of three-dimensional renderings, which can hardly be considered personal), and less focused on the creative, expressive, diverse side of the contemporary urban experience.

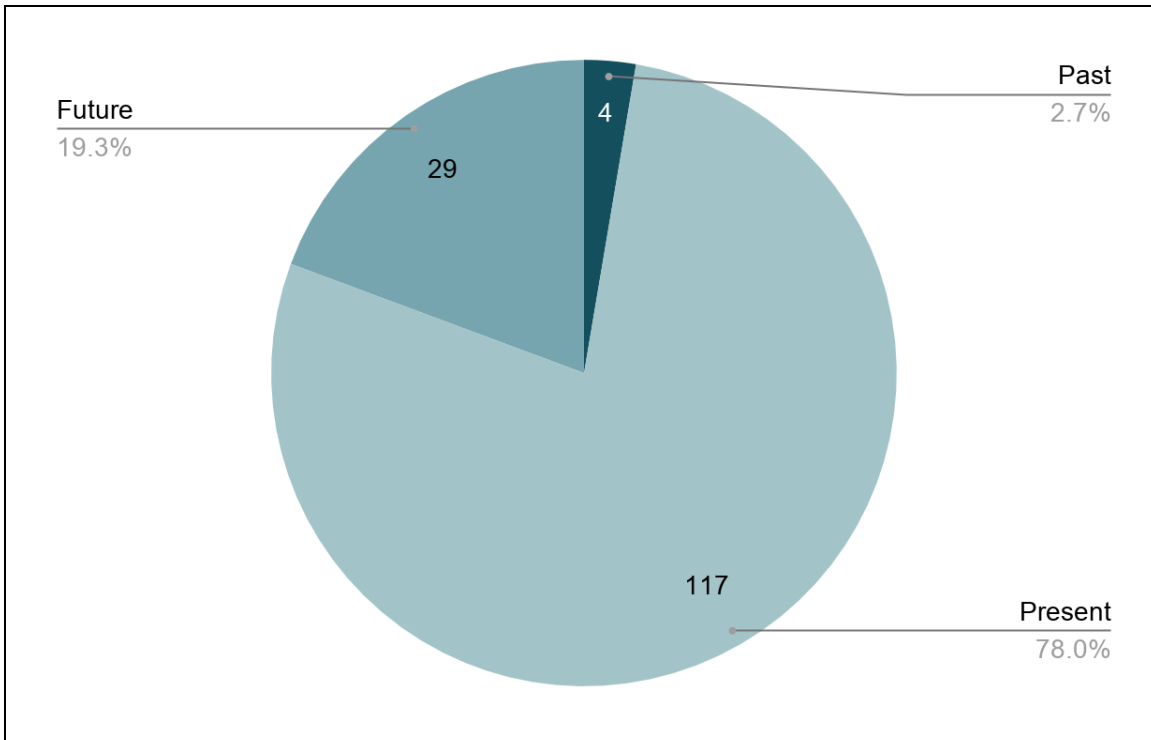
## **Topics, Temporal Focus, and Social Media Use**

In addition to the five questions about image types, the survey also asked respondents to select the topics that they most want to access on municipal social media. These items are a mix of forms and themes, and are not meant to be corollaries to the themes and forms of the image type matrix, though there is certainly overlap between some of them. My purpose with this question was to get a general sense of what respondents look for when they visit platforms like @CambMA. Whereas the five image-based questions were designed to assess the functional effectiveness of form, this question is more direct in its attempt to simply define the content that respondents seek. The question asked respondents to select three topics out of ten. Results fell into three broad tiers of selection. In Figure 21 below, it is clear that news and announcements were the most popular selections, followed by transportation. These three topics are those that may have the most potential impact on a resident's everyday life. This result echoes some of the previous observations about the usefulness, depending on context and application, of Form 4 images, though transportation updates are likely to be communicated by Type 1.3 images (cityscape via data visualization). The next tier consists of items concerning climate, photographs, and resources. There are some surprising results here, as Form 1, the photograph, was the most frequently selected form in the questions about images but it was not highly ranked as useful by survey respondents. A possible explanation for this discrepancy is that respondents do not go to municipal feeds seeking photographs directly, but that much of the information they seek comes in the form of photographs.



*Figure 21.* The number of times a topic was selected by survey respondents for the question about the content they seek on a municipal social media feed.

The survey also asked respondents whether they felt that a municipal feed should focus on matters of the past, present, or future. 78% of respondents said that the focus should be on the present while approximately 19% said that the focus should be on the future (Figure 22). The latter percentage is lower than I hypothesized; what is most surprising, though, is how few respondents said that the past should be the focus of a municipal feed. The cities of the urban Northeast form one of the oldest urban agglomerations in the country. Much of their histories overlap with those of the American Revolution, the writing of the Constitution, the Industrial Revolution, and early information infrastructures. While these histories still form part of the region’s collective culture and identity, it appears that the municipal Twitter feed is not the ideal genre for telling those histories.



*Figure 22.* The number and percentage of survey respondents that selected whether a municipal social media feed’s content should focus on past, present, or future.

Perhaps people in the urban Northeast access those histories elsewhere, perhaps Twitter users find an incongruity between “history” and “social media”—that these two things are discrete and separate, which renders the former better suited for other genres and media, or perhaps those histories are simply becoming less important to people who use social media regularly. To say that there is little interest in history for a region that, many would say, has woven it into its identity is to make assumptions about that region’s identity that may have been true but are not necessarily *as* true today (and may become less and less true as Cambridge continues to grow). Given that Cambridge is gaining population—not only from other states but from other countries, and given that one of the audiences for the municipal Twitter feed consists of those who are preparing to visit or move to Cambridge—these data are not as surprising as they first appear. As Cambridge changes, the perception of its history must be expected to change as well.

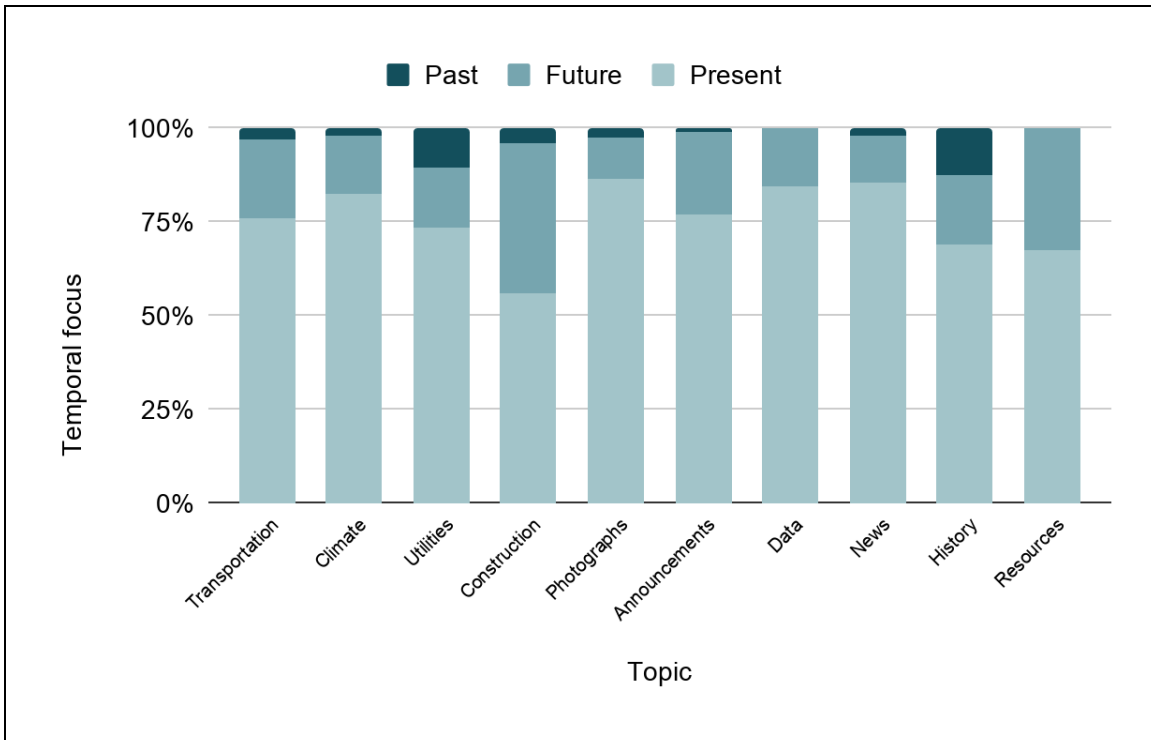


Figure 23. The percentage of respondents' preference for a municipal feed's temporal focus (past, present or future) within each content topic.

The chi-square analysis functionality in Qualtrics shows a statistically significant connection ( $p = 0.04$ ) between temporal focus and the topics selected. Figure 23 above shows the percentage within the results for each topic depending on what the respondent selected for temporal focus. There is a correlation between selecting the past as a focus for a municipal feed and seeking content related to history. There is a correlation between selecting the present as a focus and seeking photographs. This lends support to my theory that photographs are a vehicle for respondents to access useful and practical information. There are also correlations between selecting the future as a focus and seeking content related to construction. Construction is one of the processes by which the city of the future is made real. Preceding the physical act of construction are many documents portraying the future that will be created, i.e. blueprints, plans, renderings, graphics, and so on—most of which can be thought of as documents describing a virtual



world (one that is not real *yet*). These data are relative and proportionally weighted—very few respondents reported that they seek historical content—but they align with previous observations, trends, patterns, and hypotheses. Consider Figure 24 below, which shows that those who use social media rarely are more likely to seek history as a topic. The counterpart to this observation is that frequent social media users are *less* likely to have in interest in history. Frequent users of social media, on the other hand, are looking for resources when they visit a municipal feed; they may view the feed as serving a practical and functional purpose.

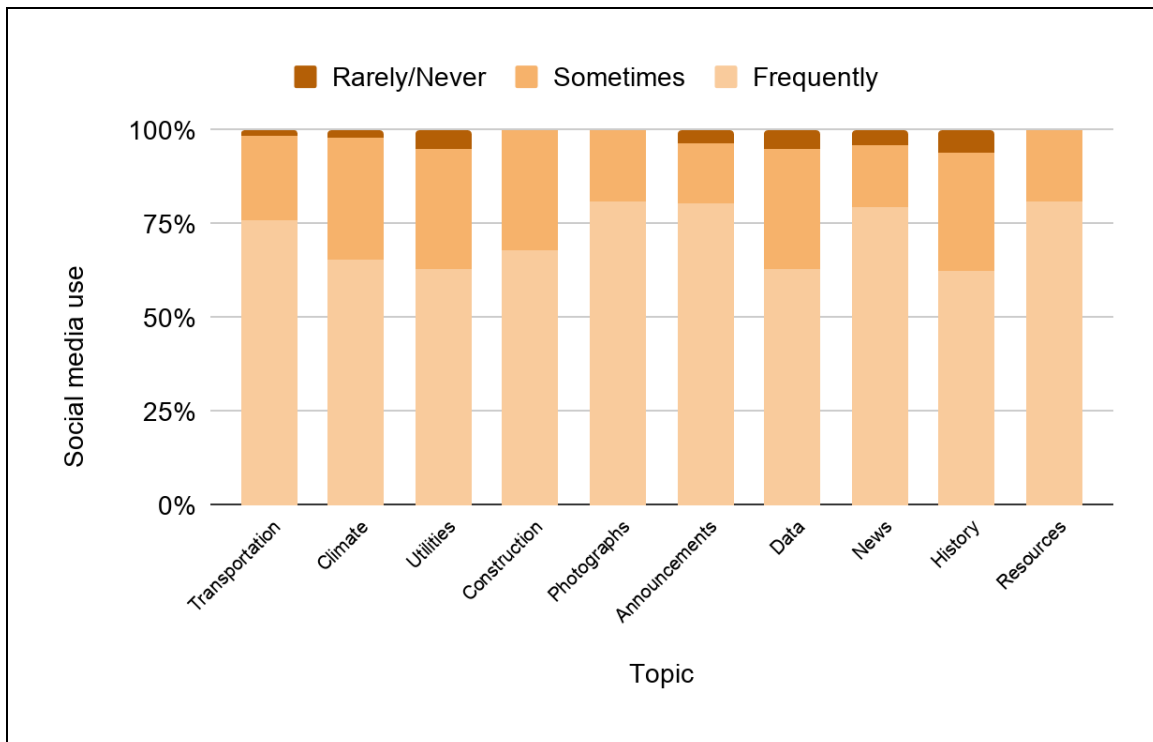
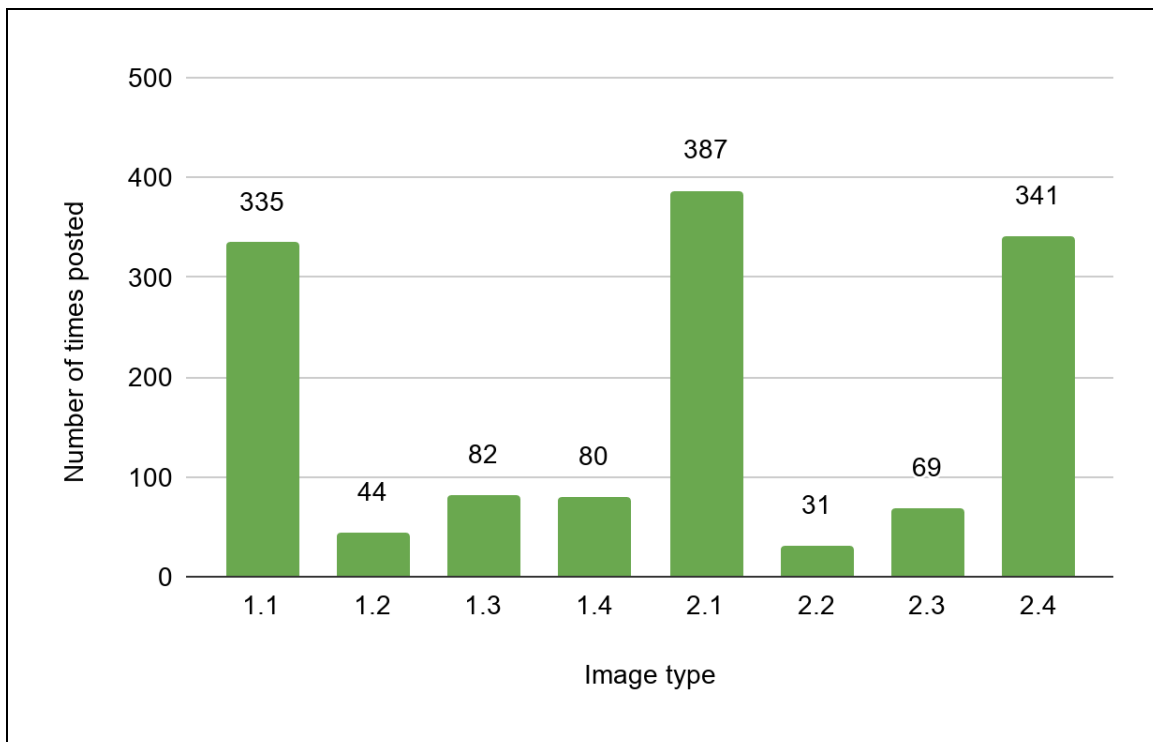


Figure 24. The percentage of respondents' social media use within each content topic.

### Contextualizing the Coding Results

One of the reasons this was designed as a mixed-methods study was to compare and contrast the coding results from @CambMA and data from the MTurk survey. Figure 25 below shows the total counts for each image type for @CambMA. Subsequent figures

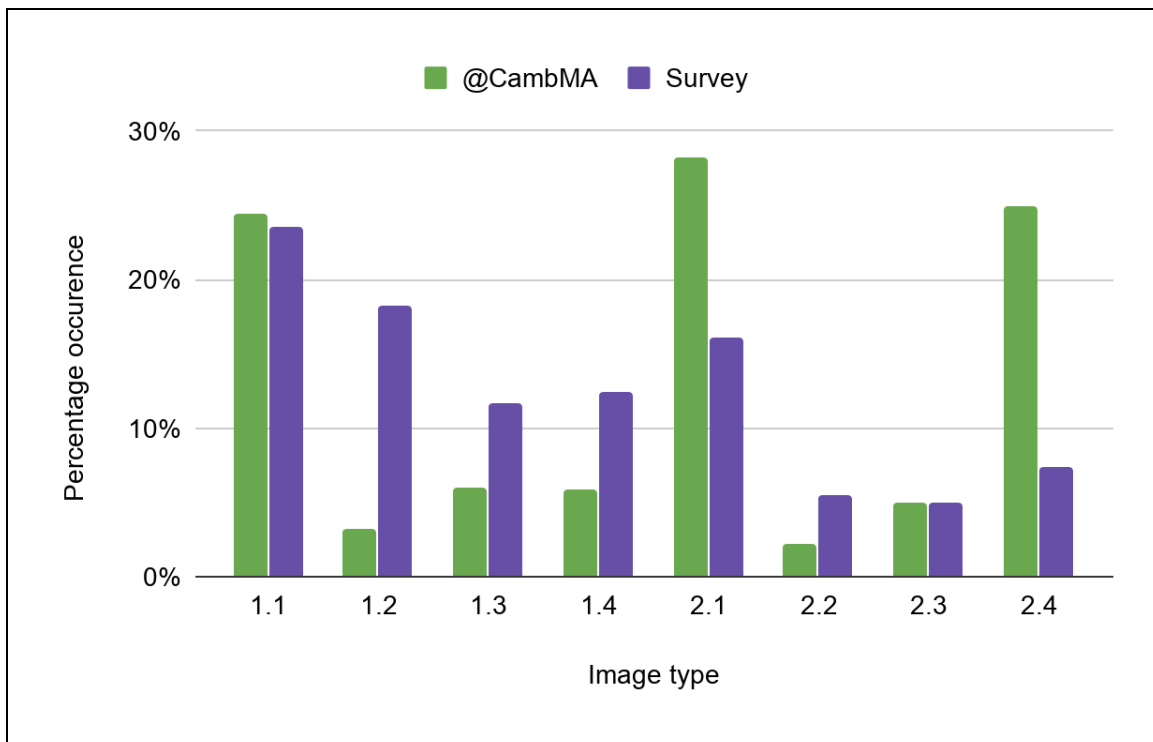
will show bar graphs where percentage has replaced number for the y-axis, allowing for proportional comparisons between the Twitter feed and the survey data. This is also where the aggregate data from all five survey questions are especially useful.



*Figure 25.* The number of times each image type occurred within twelve months of tweets by @CambMA. 1,369 tweeted images were coded in total.

The distribution of image types in @CambMA is noticeably unbalanced. Most images fall into three types: Type 1.1 (cityscape via photograph), Type 2.1 (component via photograph), and Type 2.4 (component via text-image composite). This means that @CambMA contains more photographs and text-image composites than other image types. Previous analysis allows me to infer that @CambMA posts many announcements for events and initiatives. This is expected for the genre, but more than the survey results would suggest is wanted. Type 1.1 (cityscape via photograph) and Type 1.2 (cityscape via representation) are both frequent posts on the feed and Type 2.2 (component via representation) is relatively infrequent; these results more closely match with the survey

results. After Type 2.2, Type 1.2 is the least common type of post. This is a substantial difference from how frequently survey respondents selected Type 1.2. Figure 26 below, which puts the coding and survey results side-by-side, highlights this disparity.



*Figure 26.* The percentage each image type occurred within twelve months of tweets by @CambMA compared with the percentage an image type was selected by respondents.

This direct comparison is made possible by replacing total count on the y-axis with percentage. There are some notable similarities between the feed and the preferences of survey respondents. Type 1.1 (cityscape via photograph) was posted and selected at a similar percentage, as was Type 2.3 (component via data visualization), although the percentage is much lower. The biggest differences here are with image types that received considerable attention earlier in my analysis. Type 1.2 (cityscape via representation), Type 2.1 (component via photograph), and Type 2.4 (component via text-image composite) are posted by @CambMA and selected by survey respondents at very different percentages. Respondents selected Type 1.2 more than any other image

type other than Type 1.1 (cityscape via photograph), and yet @CambMA rarely posts Type 1.2 images. It appears that survey respondents would be receptive to @CambMA posting fewer photographs and more representative images, maps, and data visualizations focused on the cityscape instead. For a specific example, the survey results suggest that Form 4 is more effective when paired with images of the cityscape, but @CambMA posts Type 2.4 much more than Type 1.4 (cityscape via text-image composite). However, municipalities may be more likely to repost Form 4 images as they often communicate information about events or emergencies. These findings are further illuminated when comparing the results for theme and form individually. In Figure 27 below, we see that the biggest different in form concerns Form 2, representation. Then, in Figure 28, we see notable differences in how often Theme 1 and Theme 2 were portrayed on the @CambMA feed and were selected by survey respondents, respectively. In terms of theme and form, @CambMA has more photographs of the city's components whereas survey respondents favored representations of the cityscape. The gap in the percentage of Form 2 images in Figure 27 is striking. While there are gaps between the coding and survey results for the other forms, they are not as pronounced. Figure 28 below reveals that much of the difference in overall image type posting and selection percentage comes down to Theme 1 and 2.

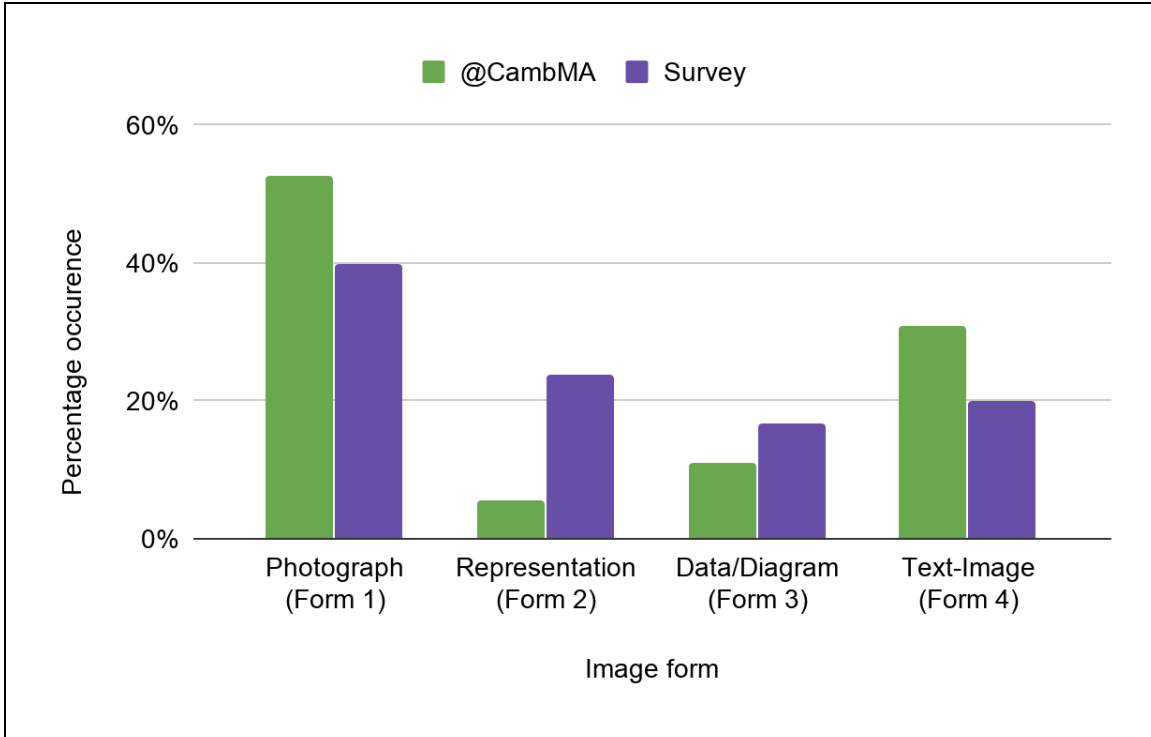


Figure 27. The percentage each image form occurred within twelve months of tweets by @CambMA compared with the percentage an image form was selected by respondents.

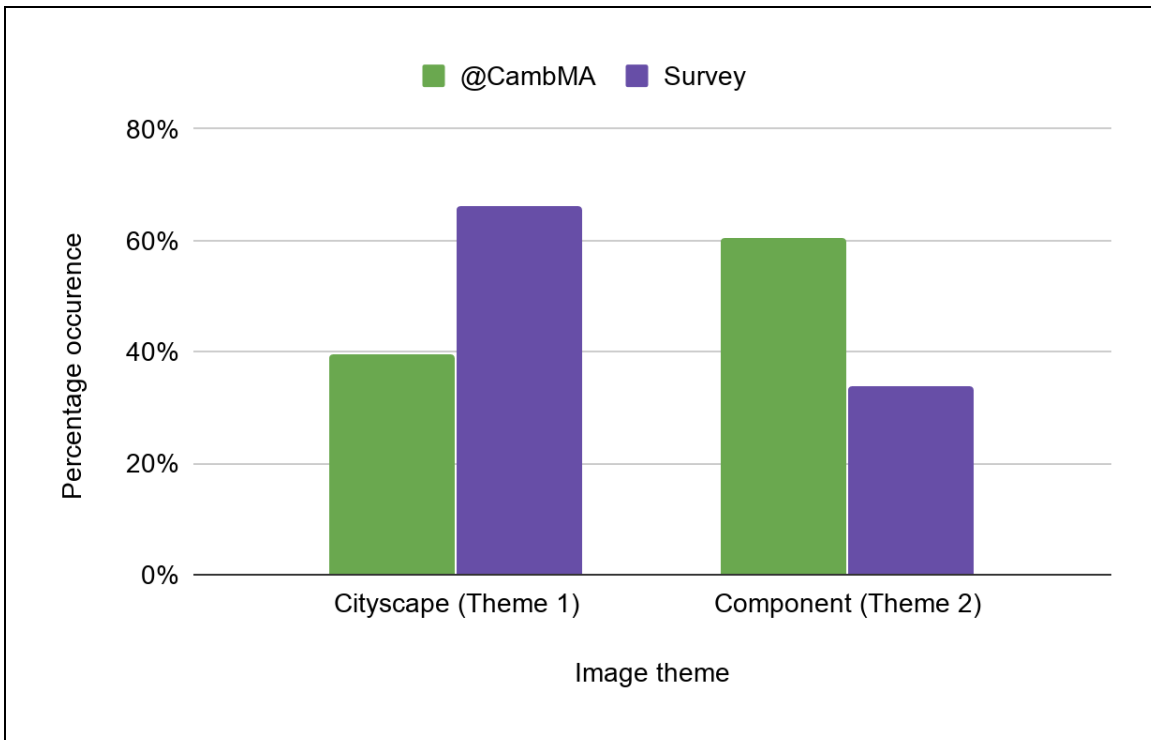


Figure 28. The percentage each image theme occurred within twelve months of tweets by @CambMA compared with the percentage an image theme was selected by respondents.

The two datasets compared in these graphs are inherently different and it would be a false equivalency to suggest that they are analogous. Analytically valid comparisons can be drawn, though, when the data are proportionally weighted, between what *is* on a Twitter feed and what respondents think *should be* on a Twitter feed. The differences in form are important, especially when considering the importance of Type 1.2 (cityscape via representation), but the main difference between what @CambMA posts and what survey respondents selected can be found in the differing percentages of the posting versus the selection of Theme 1 and Theme 2. Synthesizing all the data from the survey and the coding results leads to an admittedly “big picture” view of things, in which a single respondent’s preferences can appear lost. However, it is often from the panoramic viewpoint, analytically speaking, that some of the most important conclusions about cities can be made. Lynch (1965) states that while “the image of a given reality may vary significantly between different observers” (p. 6), there can still be “substantial agreement among members of the same group; it is these group images, exhibiting consensus among significant numbers, that interest city planners who aspire to model an environment that will be used by many people” (p. 7). The results of the coding and the survey aid us in defining and measuring the power of the cityscape, which is often described with the vocabulary of the abstract and intangible. But they do more as well; these results speak to the idea and the significance of the group perspective and the consensus among numbers that Lynch (1965) emphasizes.

## CHAPTER 5

### CONCLUSION

In 2019, the United States city remains what Jacobs (1961) defines as an “immense laboratory” (p. 9). Today, digital media and virtual realms have taken on active roles in this laboratory. The municipal social media feed is one of the most active instruments in this context, and this activity brings with it questions about the developing genre’s application, function, and effect. The results from coding @CambMA and surveying 150 respondents who are familiar with the Northeast Megalopolis provide a starting point for addressing these complex questions. Genres are social and functional, and so the genre moves for @CambMA are rooted in its very applications, functions, and effects, which come into focus through the use of the image type matrix. The 150 survey respondents function as a potential audience viewing what is essentially a distilled version of @CambMA in the survey. Cambridge is not a facsimile of all the cities in the Northeast Megalopolis, but that does not mean that the data from the study are not useful for other cities to consider. Cambridge proved to be valuable as a case study for an exploration of medium and genre. Respondents who signaled a relationship with Cambridge did not vary significantly in their responses from respondents who only signaled a relationship with the urban Northeast. Furthermore, as most of the Northeast Megalopolis lives not within the boundaries of its core cities but in bordering cities and suburbs, and because these urban areas are either “mosaics” or polycentric regions where residents and visitors constantly cross municipal lines, it stands to reason that the “Cambridge experience” and the “Northeast experience” are similar enough not just to warrant comparison, but to make results from case studies such as this one exportable, at least within the confines of how municipal social media feeds work.

## Reaching the Audience

Hand and Ching (2011) claim that it is “possible for cities to engage with their citizens through social media tools such as Facebook [but] that simply having a Facebook page does not automatically create meaningful citizen engagement” (p. 379). Whether or not these feeds have found their audience yet, the audience is there and ready. When we contemplate the results of the @CambMA coding and the survey data side-by-side, it is tempting to ask: *are the people getting what they want?* Can we see the survey results as audience expectation, and the coding as what is currently being offered to that audience? These are complicated and problematic questions, precisely because the purpose of a public or municipal feed is multifaceted. The definitions of “want” and “need” must be considered. Some information may not be wanted, but it may be needed. Conversely, some information may not be needed, but wanted. No matter what, as in most communication contexts, engagement, access, and clarity are key. That is where exploring genre, analyzing visual style, and the image type matrix become especially important and applicable.

Should the coding match up with the survey results? Do the results provide an instance of what the feed should be like? These are difficult questions, but there are some takeaways for the posted content of @CambMA, and things that municipal feeds in the urban Northeast should consider. Without an audience, the feed is nothing, so it needs to consider how it can become or continue to be relevant. Survey data is more useful than counting followers in terms of identifying what visual genre moves are effective in building or maintaining an audience. Ultimately, people need to have a reason to see the municipal feed as a useful genre. After all, “Americans are practical people who will not embrace the next great technology unless it meets several criteria” (Cortada, 2000, p.



179), among those criteria being the potential to fulfill everyday needs in our personal and professional lives. The practical uses of digital technology also push its continued development as users find ways in which the technology fails them in its everyday application. The solutions to these failures drive the industry. Mullen (2006) traces this back to McLuhan, whose ideas “called our attention to the ways in which we both produce and are produced by our interactions with technology” (p. 375). Lapham (2012) also finds that McLuhan’s theories remain relevant and applicable today, particularly in how “new means of communication give rise to new structures” (p. 13). Could a flexible, visual narrative like @CambMA exist without microblogging platforms and the technology needed to create them? How could such a narrative, which is endlessly updatable, even exist in the analog world? The genre can be improved and it may be reborn at some point, but total disappearance or failure seem unlikely.

### **Complex Visual Literacy**

It is important to note the basic anatomy of a tweet: there is the text portion and then the image portion. One may exist without the other, or they may both be present, lending Twitter an ekphrastic quality that warrants further research. There is certainly an element of ekphrastic communication in the municipal Twitter feed. In the typical ekphrastic pairing, a poem describes or accompanies a visual image. The relationship is symbiotic such that the poem builds on the image and informs the viewer’s understanding and interpretation of it. The image and text modify, clarify, and adjust each other. Word and image work in this mutualistic sense across most social media platforms today, but Twitter is unique in that it has transitioned from a very text-heavy platform—consider that the 140-character limit was once synonymous with the Twitter brand—to one that is often used as a vehicle for visual storytelling. As Twitter becomes

more and more of a text-image hybrid, it becomes more ekphrastic, the text often serving as a caption for the image, or as a hyperlink to a page that explains the image, provides more images in the same vein, or invites the reader to interact with the image in some way (a survey, for instance, or a VR experience).

The feed, with all its accompanying subgenres, demands substantial visual literacy from its viewers. The feed tells the story of a virtual city—not Cambridge itself, but a representation of it, one Cambridge among many possible ones. It is a narrative not bound by arc—for who can predict the future?—though it may still feature recognizable archetypes of urban narratives. Apkon (2013) reminds us how, as “McLuhan said, new mediums tend to use, and then ultimately transform, the medium they replace” (p. 72). Can the municipal social media feed use, transform, and replace the bulletin board, the mailing, the master plan, even the historical archive? Powers (2010) explains how, according to McLuhan, when we replace one mode of communication with another “it alters how we perceive and process reality, in effect creating a new environment for the mind and for our lives. We inhabit a reality shaped fundamentally by our tools. Thus the medium is the message, far more than the content it carries” (p. 197). In this context, the term “digital citizen” takes on a profound new meaning. Glassberg (2001) suggests that cultivating and maintaining a sense of place is becoming more and more difficult in an era of media saturation and the increased digitization of our environment. However, if I follow or subscribe to the municipal social media feed of a city in which I do not reside, do I not join that city in some way, or perhaps even live in it? Lovink (2016) asks whether or not “space [is] still the number one identity provider” (p. 161) while López (2008) is unequivocal on the issue: “I now believe the goal of media education is to help people find a sense of place” (p. 1). Whether or not having a sense of place necessitates a

physical existence in the place in question is difficult to answer, as is the question of whether a physical place needs to be the setting for a place-narrative. However, even if places that are experienced wholly through virtual means are insufficient for those purposes, those places have become a part of our lived experience in today's world. As such, they should be known and understood.

### **Revisiting the Results**

One of the main goals of this thesis is to know and understand place as it is experienced virtually. Both the coding and the survey results show that photography is an effective and a popular way to communicate visually. The cityscape, as a thematic approach, was a popular choice for survey respondents but not posted by @CambMA with the frequency to match. There are also splits or quasi-contradictions in the survey data itself between what the feed can do and what respondents wanted to see. Lapham (2012) wonders if “our digital technology is still too new” (p. 19). In terms of municipal social media, we may indeed be in a lag period right now, in the interim time, as the genre and its ecosystem are still emerging and being understood, not to mention still impacting other genres and being impacted by them in turn. Furthermore, this is also a dynamic time for cities, especially those in the urban Northeast, so this lag could be further magnified. Has @CambMA “caught up” to the intersection of a booming Cambridge and a social media platform scarcely old enough to vote?

Despite these uncertainties, several conclusions emerge from the results of this study. Images of the cityscape are effective in evoking the essence of a city. Aerial photography in particular, or scenes of whole city squares or neighborhoods, were popular choices for capturing the essence of a city or for serving as a profile picture. It is in these images that respondents seem to recognize the city; for viewers, these images tell

a grand story and are key building blocks of visual narratives. This may remind us of a frequent opening shot to establish setting in an urban film: the sweeping panorama of a cityscape. In looking at the results for each image type, we see where each image type excels or applies and where it does not. For example, the Type 1.1 image (cityscape via photograph) was considered by respondents as an optimal image type for capturing the essence of a city or for functioning as a feed's profile picture and engaging potential visitors (Figure 29). It was the image type that matched with what respondents would want to see on a municipal feed; however, it was also identified as an image type that would be relatively ineffective for announcing an event or initiative.



*Figure 29.* An example of a Type 1.1 image (cityscape via photograph) posted by @CambMA (City of Cambridge, 2018, May 14). Across all five questions, respondents selected this image type more than any other.

Whether or not certain image types can be thought of to have specific purposes is one of the major questions that the study was able to answer. Through grounding five image-based questions in the functional capacity of images, the study showed that some image types excel in communicating specific information or in fulfilling a specific purpose. For example the use of a representational image of the cityscape (Type 1.2) is

effective in making a city look attractive and in making potential visitors want to come to the city. Additionally, text-composite images (Form 4) have a very specific application; they are useful for announcing events or initiatives. What is crucial to remember is that these correlations revolve not around the content of any of these images but around their structure and composition. Not all cityscape photographs are aerial images, for example.

In terms of what temporal content respondents think a municipal feed should focus on, present-oriented content was the most popular choice. However, there were some statistically significant connections between temporal focus preference and the topics that users would seek on municipal feeds. For example, users who selected future-oriented as their temporal focus preference were more likely to be interested in the topic of construction. Construction and development are part of the process of envisioning and creating the future. If @CambMA is interested in becoming a more future-oriented feed, then posting more images of construction and development, whether photographs or renderings, would be a potential strategy to pursue. Users who preferred a more present-oriented feed were more likely to seek posted content with news and announcements. Lastly, past-oriented respondents would seek posts with historical content.

Some of the most striking findings from the study involved the specific similarities and differences in image type occurrence and selection between the two datasets, @CambMA and the survey results, respectively. The three image types that @CambMA posted the most were Type 1.1 (cityscape via photograph), Type 2.1 (component via photograph), and Type 2.4 (component via text-image composite). The three image types that survey respondents selected the most in responses to image-based questions were Type 1.1, Type 1.2 (cityscape via representation), and Type 2.1. The

results for Type 1.1 were the closest of any image type between the two datasets. While Type 2.1 was among the most frequent image type within each dataset, the percentage occurrence was much higher for @CambMA. The similarities end there; survey respondents selected Theme 1 images over 60% of the time, while @CambMA only posted Theme 1 images under 40% of the time. In the case of @CambMA, occurrence refers to how many times an image type was posted. In the case of the survey, occurrence refers to how many times respondents selected an image type.

@CambMA tweeted 1,369 images and 150 survey respondents answered five questions in which they selected three out of eight images. This then allows us to observe if @CambMA is posting images types at the same occurrence percentage that respondents would expect. The key assumption here, which is also a limiting factor of this study, is that @CambMA is posting content that does in fact fall under the five question tags: *Essence*, *Profile*, *Visit*, *Event*, and *Desire*. The five question categories were designed to account for most of the functions of a municipal Twitter feed, so this assumption should be valid. If the only purpose of @CambMA were to post event announcements, then comparison would not be possible. However, as these feeds do not have single, stated purposes, it is up to researchers to induce what their purposes might be. This study also did not measure whether or not @CambMA takes a balanced approach to these five question categories. I expect that it does because the five question categories were created via an inductive approach. Coding the images of @CambMA to see which of the five questions the images address would be difficult if not impossible. It would be easy to say that an image is announcing an event, but impossible to say whether or not an image is what social media users want to see or whether or not an image is capturing the essence of the city. Furthermore, analysis of cross tabulation showed that

image type preferences were mostly stable across topics, which suggests that the image type preferences established by the survey should apply to most collections of images from a municipal Twitter feed.

### **Next Steps for @CambMA**

What should @CambMA be or do? Based on comparisons of the coding results and the survey data, @CambMA could consider posting more images of the cityscape. It should keep posting photos in general, as these write much of the visual narrative, but should focus more on images that create a sense of the whole city. The feed could also contain more Form 2 images, and thus more art, more renderings of the future, and more images of places both past and possible. There is enormous potential in a municipality's ability to use digital media to show its residents possible futures. In 1990s Vancouver, "transport was forced to slash services, fares rose dramatically and so did property taxes. No one is happy with the outcome. But it might have been avoided, says Christina DeMarco, a senior planner for the Greater Vancouver Regional District, if people understood better the consequences of their decisions. What they needed, she says, was a way of looking into the future" (Hrynyshyn, 2002). A potential solution is with games such as QUEST, developed by John Robinson at the University of British Columbia. Hrynyshyn (2002) reports that one only needs to play "QUEST a few times and it soon becomes obvious that the only desirable futures demand major changes and sacrifices in the way we live now. Not too keen on that factory down the street? Fine, but look what pushing industry to the outskirts does to your commute time. Spend more on healthcare? Great, only that leaves less for trash disposal." @CambMA may not be able to embed a game like this on the Twitter feed, but more images that fall into the Type 1.2 (cityscape via representation) category would be a step in this direction. @CambMA

already posts mosaic images, in which several images are put together. Doing so with Type 1.2 images could show residents a variety of options for what the city could look like, and polls (which are easy to embed into Twitter) could keep track of preferences. In terms of further steps, the possibilities abound for municipalities to integrate ever more virtual experiences into their social media feeds. As immersive virtual reality technology is becoming less bulky and less expensive, municipalities could experiment with linking their social media followers directly to VR experiences. For example, Los Angeles has offered “LA River, a virtual reality smartphone app that lets users explore the river’s history and its ecosystem, while also gaining a view of the potential impact of revitalization efforts” (Stone, 2017). Zhang and Moore (2013) find that both professionals and students in planning and design favor virtual reality over GIS and CAD, both of which have a much longer history of practical use, noting that virtual reality is particularly engaging and user-friendly—perhaps due to its history in entertainment and gaming. Howard and Gaborit (2007) also conclude that virtual reality can be quite usable for a significant portion of the public and that it can facilitate meaningful feedback from the public as well. Historically, technological shortcomings have been one of the main impediments to profound, meaningful participation in planning (Fagence, 1977). The emerging media of today have the potential to overcome this hurdle.

What holds a city back from implementing these genre shifts? Beyond possible constraints of time and money could be the municipality’s reluctance to shift the focus of the feed away from emergency notifications. @CambMA posted a high number of Form 4 images, many of which fall under the emergency notification umbrella, e.g. weather announcements, hazardous conditions, infrastructure updates, parking bans, road closures, etc. One could argue that emergency notification should override everything.



However, the feed is not, by default, an emergency line. There are countless tweets that have nothing to do with emergency information. Municipal feeds are absolutely useful for emergency notification, but they are certainly not the only platform through which residents learn about emergencies. More research is needed on the obligations that these general municipal feeds have to post emergency content and with what frequency.

### **Further Research**

Ellard (2015) states that “the makeup of our nervous system makes it remarkably easy for us to jettison the trappings of real life and to take flight into journeys of the imagination” (p. 176). Allmendinger (2001) wonders whether any one city even exists at all. There are just as many cities in one physical location as there are people, for within each resident lies a unique city, a unique vision. Considering this, it may seem both intuitive and paradoxical to suggest that planning today be a collaborative endeavor, but it is for this exact reason that it should be. Planning today can be a place where different residents come together and share their versions of the city while they simultaneously consider other versions, versions that are perhaps real to other residents or versions that are entirely virtual and unreal to everyone, with the possible exception of the imagination of the planner, designer, or virtual reality artist. As virtual forums, feeds like @CambMA have an opportunity to start and moderate some of these discussions.

And so I return to the question: what are the genre conventions of a municipal social media feed? In a way, this question is still being answered as I write; it is likely that those answering the question—those posting on the feeds, that is—do not know that they are answering it. In today’s media sphere, genres are born, not planned; they come into being as opposed to being engineered. The feed is not static. It is morphing—every day, often every hour, sometimes every minute. Looking back through a city’s feed, we

see a journal of its history, its events, its troubles, its triumphs, and, perhaps most interestingly, its aspirations for the future. Whenever we return to the feed, we see a different city. However, we are still only seeing one version of the city—a curated one, one that is among an infinite number of simultaneously existing cities *not* being documented. An image of this square over that one, a picture of this building from one angle over another—these are the variables that compound each other to create a city’s feed. We face a situation not unlike someone browsing a Borgesian Library of Babel. If we see these feeds as examples of visual storytelling—the narratives for which are half-planned and half-extemporaneously written, most likely—then these variables are also narrative genre moves. Audience participation, which is part of this genre ecology by default, makes the feed part urban autobiography as well, part collective autobiography. The photographic image “promises us truth but all too often us used to subvert and distort the truth. Pictures may not lie, but liars (that is, those who manipulate the truth with their images) take pictures” (Berger, 2012, p. 149). I believe we can safely assume that @CambMA is not actively trying to manipulate or deceive us. Doing so in terms of communicating safety information would be unethical and criminal depending on the nature of the lie. But we can ask what and whom the feed excludes. Do these feeds perpetuate a certain version of Cambridge? Do the images recognize the diverse populations of the city?

The municipal feed, as a public narrative focused on local matters of identity and place, has great potential to resist what Lanier (2012) has identified as the “digital flattening of expression into a global mush” (p. 51). McCarthy (2018) reports on Gallup polling that shows Americans are “more trusting of their local government than of their state government.” My research brings potential contradictions under the same

microscope: technology giants, big data, social media, etc. on the one hand, and the local, the commons, the neighborhood, and so on, on the other. The question we need to ask is whether or not “cybercommunities [can] transform cyberspace into a genuine, authentic public sphere(s)” (Ghuman, 2013, p. 87). Can @CambMA, as a public service, a public utility, even, somehow push against the very thing that is its platform—namely, a capitalist, profit-driven, big data social media company? Can the municipal Twitter feed both exist within *and* challenge something that may be in opposition to it? At the very least, the municipal feed can try to keep up with the city—and how many other static image genres can do that?

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## TWEETS

*Note: @CambMA posted all tweeted images cited in this thesis, including the survey. The citations for all tweets are provided below in chronological order. Attributions are provided wherever possible.*

City of Cambridge [CambMA]. (2017, August 1). [Tweet]. Retrieved from <https://twitter.com/CambMA/statuses/892316489444990976>

City of Cambridge [CambMA]. (2017, August 8). [Tweet]. Retrieved from <https://twitter.com/CambMA/statuses/894977514505940998>

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City of Cambridge [CambMA]. (2017, September 18). [Tweet]. Retrieved from <https://twitter.com/CambMA/statuses/909882477505789952>

City of Cambridge [CambMA]. (2017, September 22). [Tweet]. Retrieved from <https://twitter.com/CambMA/statuses/911332029656158210>

City of Cambridge [CambMA]. (2017, September 29). [Tweet]. Retrieved from <https://twitter.com/CambMA/statuses/913913538686709760>

City of Cambridge [CambMA]. (2017, October 15). [Tweet]. Retrieved from <https://twitter.com/CambMA/statuses/919652100837064704>

City of Cambridge [CambMA]. (2017, October 18). [Tweet]. Retrieved from <https://twitter.com/CambMA/statuses/920778026949992451>

City of Cambridge [CambMA]. (2017, October 31). [Tweet]. Retrieved from <https://twitter.com/CambMA/statuses/925304849134125056>

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City of Cambridge [CambMA]. (2018, February 16). [Tweet, art by Diane Britton Dunham]. Retrieved from <https://twitter.com/CambMA/statuses/964678793976799232>

City of Cambridge [CambMA]. (2018, February 21). [Tweet]. Retrieved from <https://twitter.com/CambMA/statuses/966442415795077121>

City of Cambridge [CambMA]. (2018, March 5). [Tweet]. Retrieved from <https://twitter.com/CambMA/statuses/970758858837757953>

City of Cambridge [CambMA]. (2018, March 21). [Tweet]. Retrieved from <https://twitter.com/CambMA/statuses/976544771555590145>

Cambridge Police [CambridgePolice]. (2018, March 25). [Tweet]. Retrieved from <https://twitter.com/CambridgePolice/status/977870246219481088>

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City of Cambridge [CambMA]. (2018, May 7). [Tweet]. Retrieved from <https://twitter.com/CambMA/statuses/993526625684869121>

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City of Cambridge [CambMA]. (2018, May 17). [Tweet]. Retrieved from <https://twitter.com/CambMA/statuses/997297542961553408>

City of Cambridge [CambMA]. (2018, May 18). [Tweet]. Retrieved from <https://twitter.com/CambMA/statuses/997496786305667073>

What Works Cities [WhatWorksCities]. (2018, May 23). [Tweet]. Retrieved from <https://twitter.com/WhatWorksCities/status/999271685923725313>

City of Cambridge [CambMA]. (2018, May 30). [Tweet, image of musical group blood drum spirit]. Retrieved from <https://twitter.com/CambMA/statuses/1001797124068139008>

City of Cambridge [CambMA]. (2018, June 6). [Tweet]. Retrieved from <https://twitter.com/CambMA/statuses/1004406062957629441>

City of Cambridge [CambMA]. (2018, June 19). [Tweet]. Retrieved from <https://twitter.com/CambMA/statuses/1009026011349037057>

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City of Cambridge [CambMA]. (2018, July 11). [Tweet]. Retrieved from <https://twitter.com/CambMA/statuses/1017147268376547329>

City of Cambridge [CambMA]. (2018, July 27). [Tweet]. Retrieved from <https://twitter.com/CambMA/statuses/1022945482803474434>

APPENDIX A

SURVEY ADMINISTERED DECEMBER 2018-JANUARY 2019



1. If you are under 18 years of age or you do not consent to taking this survey, please exit this screen now. If you are 18 years of age or older and you consent to taking the survey, please click on the corresponding text box below to continue.

Yes, I am 18 years of age or older and I consent to taking this survey

2. Please confirm:

I am not a robot

3. Have you lived in or near an urban area in the Northeast region of the United States? For reference, the core cities of major urban areas in the Northeast include Boston, New York, Philadelphia, Baltimore, and Washington D.C.

Yes, I live or have lived in or near an urban area in the Northeast

No, I have never lived in or near an urban area in the Northeast

4. How often do you use social media such as Twitter, Instagram, Facebook, etc.?

Frequently (multiple times per day)

Sometimes (a few times per week)

Rarely (a few times per month)

Almost never

5. How often do you access social media posted by towns, cities, or other governmental organizations?

Frequently (multiple times per day)

Sometimes (a few times per week)

Rarely (a few times per month)

Almost never

6. Select the three most common types of information you seek when you go to a city's social media channel. If you do not access municipal social media, then select three types of information that you believe should be on such a feed.

Transportation information

Climate information

Utilities information

Construction and development information

Photos of recent events

Announcements for upcoming events

Graphs, maps, tables, statistics, etc.

Local news in general

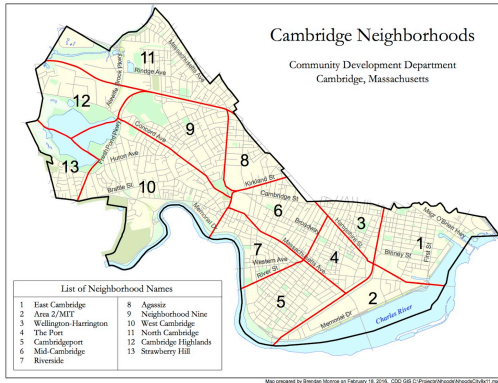
Historical information

Community resources

7. Which of the following best describes your connection to the City of Cambridge, Massachusetts?

- I have lived and/or worked in Cambridge
- I have spent significant or substantial time in Cambridge
- I have never spent any significant time in Cambridge

8. Using the map below as a reference, please select the neighborhood(s) in Cambridge in which you have spent the most time or which you know best.



- Area 1: East Cambridge
- Area 2: MIT
- Area 3: Wellington-Harrington
- Area 4: The Port
- Area 5: Cambridgeport
- Area 6: Mid-Cambridge
- Area 7: Riverside
- Area 8: Agassiz
- Area 9: Neighborhood Nine
- Area 10: West Cambridge
- Area 11: North Cambridge
- Area 12: Cambridge Highlands
- Area 13: Strawberry Hill
- I am not sure

(Monroe, 2016, February 18)

9. How frequently do you access @CambMA, the Twitter feed for the City of Cambridge?

- Frequently (multiple times per day)
- Sometimes (a few times per week)
- Rarely (a few times per month)
- Almost never

10. What three styles are best suited to show the essential qualities or characteristics of Cambridge? Select three images based on their style and form, rather than content alone.



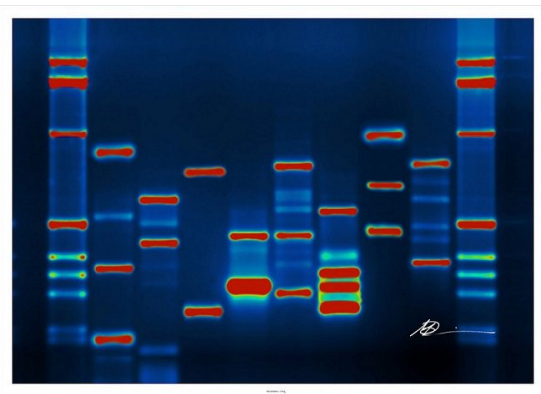
(City of Cambridge, 2018, April 7)



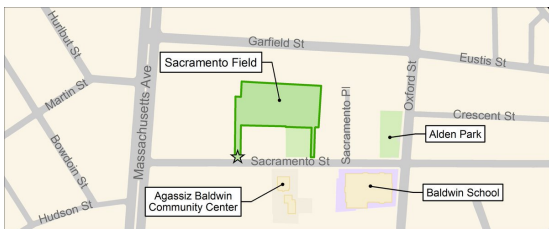
(City of Cambridge, 2018, May 2017)



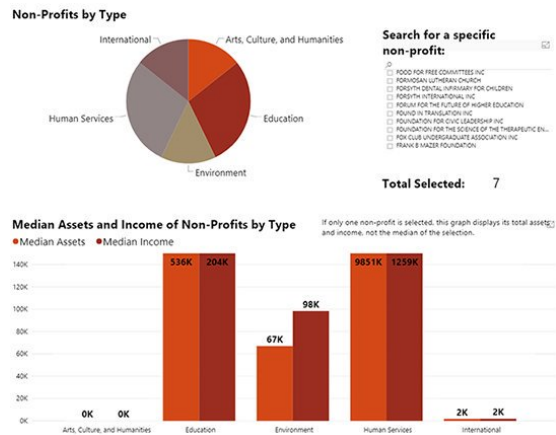
(City of Cambridge, 2018, January 16)



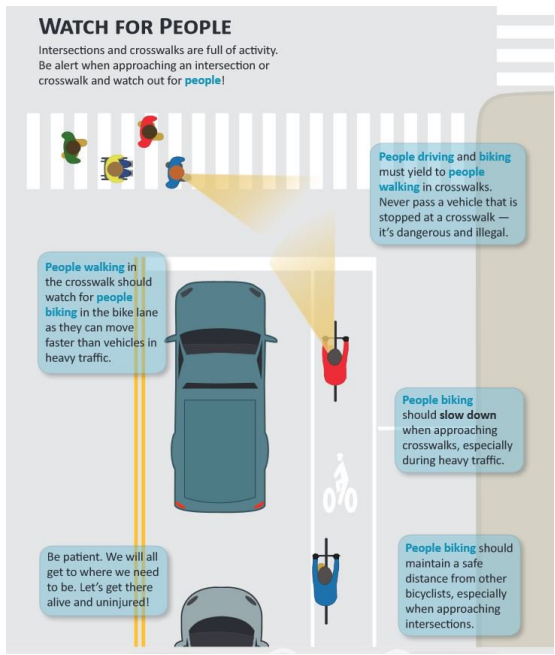
(City of Cambridge, 2018, June 6)



(City of Cambridge, 2018, July 6)



(City of Cambridge, 2017, December 6)



Better  
**Bus**  
 Project  
 Making transit  
 better together

(MIT Police, 2018, April 24)

(City of Cambridge, 2018, July 11)

11. What three image styles would make the best “profile pictures” for Cambridge’s social media?  
 Select three images based on their style and form, rather than content alone.



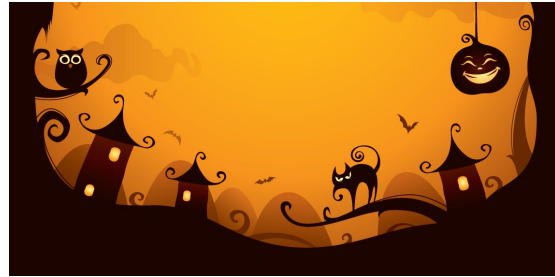
(City of Cambridge, 2017, October 18)



(City of Cambridge, 2018, June 26)



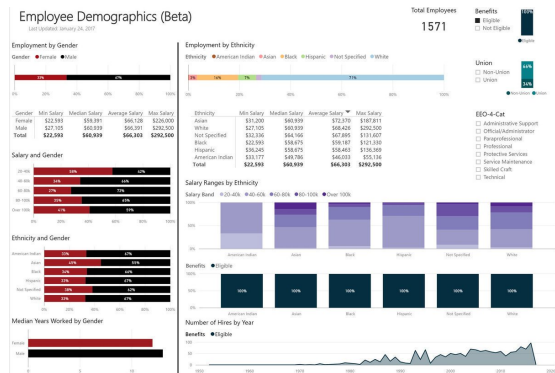
(City of Cambridge, 2017, October 15)



(City of Cambridge, 2017, October 31)



(City of Cambridge, 2018, March 5)



(City of Cambridge, 2017, September 22)



(City of Cambridge, 2017, September 29)

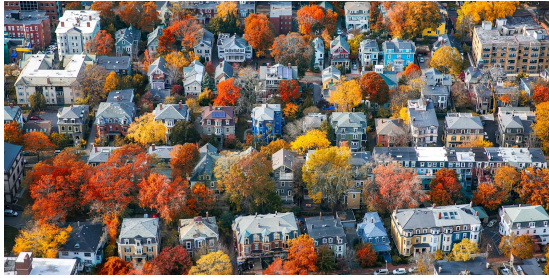


(City of Cambridge, 2017, August 8)

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12. What three image styles would be most effective in convincing people to come to Cambridge? Select three images based on their style and form, rather than content alone.



(City of Cambridge, 2017, December 23)



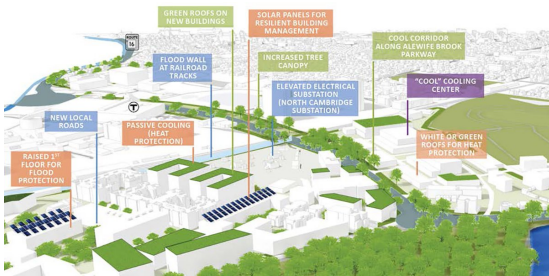
(City of Cambridge, 2018, May 30)



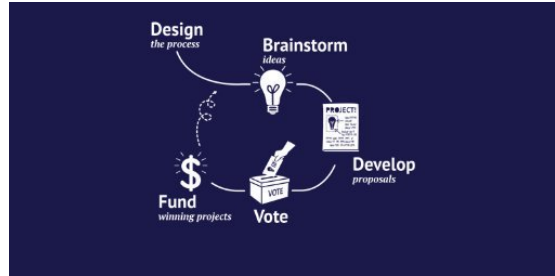
(City of Cambridge, 2018, February 13)



(City of Cambridge, 2018, May 18)



(City of Cambridge, 2017, December 18)



(City of Cambridge, 2018, July 27)

What Works Cities | Bloomberg Philanthropies

“There is a growing movement of big cities and small towns that are striving to use data to improve the performance of government and the lives of their citizens.”

—Michael R. Bloomberg, founder of Bloomberg Philanthropies and three-term Mayor of New York City

Join the What Works Cities community | [whatworkscities.bloomberg.org](http://whatworkscities.bloomberg.org)

(What Works Cities, 2018, May 23)

**HEALTH AND HUMAN SERVICES JOB FAIR**

MARCH 28, 2018 11AM - 1PM

(City of Cambridge, 2018, February 21)

13. What three image styles would work best to accompany a city announcement or initiative?  
 Select three images based on their style and form, rather than content alone.



(City of Cambridge, 2018, March 21)



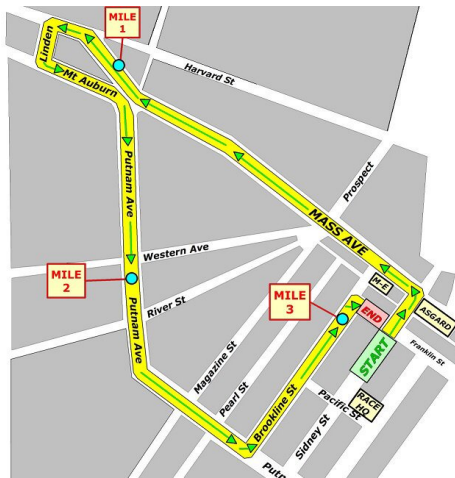
(City of Cambridge, 2018, February 2)



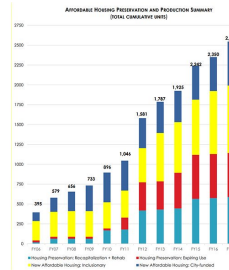
(City of Cambridge, 2018, June 19)



(City of Cambridge, 2017, November 6)



(Cambridge Police, 2018, March 25)

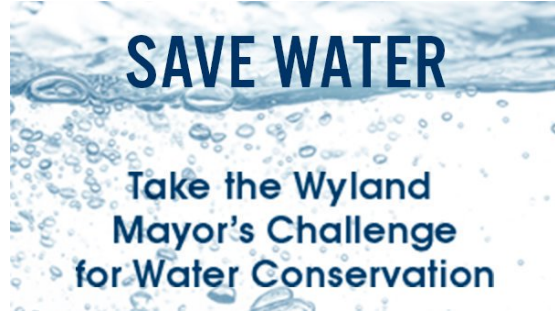


(City of Cambridge, 2018, May 7)





(City of Cambridge, 2017, September 7)



(City of Cambridge, 2018, April 5)

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14. What three image styles best fit what you would like to see on a city's Twitter feed? Select three images based on their style and form, rather than content alone.



(City of Cambridge, 2018, May 14)



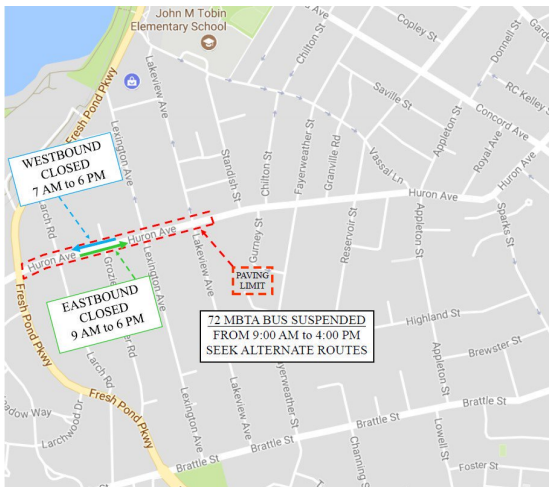
(City of Cambridge, 2017, November 16)



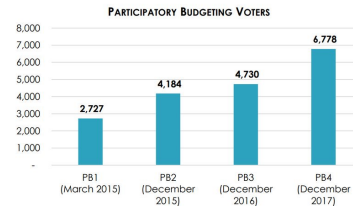
(City of Cambridge, 2017, September 8)



(City of Cambridge, 2018, February 16)



(City of Cambridge, 2017, August 1)



(City of Cambridge, 2018, April 27)



(City of Cambridge, 2017, September 18)



(City of Cambridge, 2018, February 12)

15. To what extent do you feel that the City of Cambridge has a distinct sense of "city identity"—that it is a distinct and unique place?

- Strongly
- Somewhat
- Not really
- Not at all

16. What should the social media content for a town or city focus on?

- Historical and past topics/events
- Current and recent topics/events
- Future and planned topics/events

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Note: All images in the survey were posted by @CambMA, the Twitter feed for the City of Cambridge, Massachusetts. I have reformatted the survey from its original appearance in Qualtrics. It has also been amended slightly for brevity and clarity. This change affects questions 10 through 14, which asked respondents to select images. Respondents who said that they had spent time in Cambridge were directed to answer one set of questions while respondents who selected that they had spent time in the urban Northeast were directed to another set of questions (which are omitted from this Appendix). Both sets of questions are identical in every way except for a few words which acknowledge whatever location a respondent had previously selected, e.g. "What three styles are best suited to show the essential qualities or characteristics of Cambridge?" as opposed to "What three styles are best suited to show the essential qualities or characteristics of a city in the urban Northeast?" Any additional questions that specifically mention Cambridge, other than question 7, were only displayed for respondents who said that they had spent time Cambridge.