Designing Educational and Historical Kiosks for Worcester's East-West Trail

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Abstract

This study designed three historical information kiosks that Park Spirit, our sponsor, will install along the East-West trail in Worcester, Massachusetts, to educate hikers on the history of Worcester's greenspaces. This was achieved through a survey of hikers' interest in various types of history, gathering historical stories from local news organizations, and formatting the kiosks to be attention-grabbing and visually appealing. This study's findings led us to create three kiosk designs and offer recommendations for work on other kiosks.

Acknowledgements

We would like to thank the following people and organizations for their help during this project:

Authorship

This project was performed by splitting our team into two groups: the report-writing group and kiosk design group. The report-writing group consisted of Sean Dandeneau and Nathan Walzer, and dealt with writing and revising this report. The kiosk design group consisted of Aiden Crane and Anagha Late, and was responsible for creating the kiosk designs. The following is a breakdown of the individual contributions of each team member.

Aiden Crane was in charge of designing the Mill Street and Logan Field kiosks, both gathering and formatting content. He also helped Anagha gather historical stories for the Institute Park kiosk. Additionally, he wrote the introduction (1.0) for the final report.

Sean Dandeneau was the main writer for the executive summary and sections 2.1, 3.1, and 5.0. For all other sections, he edited them before submission and revised them after receiving feedback from our advisers.

Anagha Late gathered historical stories and formatted content for the Institute Park kiosk. She also helped Aiden to create the Mill Street kiosk by gathering content, and was the main writer for section 2.1.1.

Nathan Walzer was the main writer for the abstract and sections 2.2 - 3.0, 3.2 - 4.3, and Appendix A. For all other sections, he performed the same tasks as Sean: editing before and revising after submission. In addition, he created the questions and Google form used in our online survey.

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Executive Summary

The East-West trail is a fourteen-mile long partially urban trail that passes through twenty greenspaces across Worcester, Massachusetts. This trail is unique in that it connects the city's greenspaces together by combining nature paths within the greenspaces with sidewalks and roadways in between. These greenspaces, some of which were established as far back as the mid-1800s, are rich with history. And learning about the greenspaces along the trail fosters an appreciation for the people, places, and events that shaped Worcester and its greenspaces, and connects hikers to the local community. However, currently, East-West trail hikers do not have the opportunity to learn about the history of the greenspaces while hiking. Very little historical signage exists for many of these greenspaces, and signage that does exist offers minimal information, such as a memorial stone for George Bancroft located in Institute Park, which only states that Bancroft was an historian and lived nearby. The volunteer organization Park Spirit intends to implement twenty-two informational kiosks in these greenspaces. Although seven of these kiosks have already been installed, no study has been conducted as to what types of historical information interest hikers. Our study addressed this knowledge gap by designing three kiosk panels in Institute Park, Mill St., and Logan Field, using hiker feedback to both aid in our selection of content and advise content for future kiosks.

We believe that these kiosks will enhance the hiking experience of the East-West trail by informing hikers on the history of Worcester's greenspaces. Although much of the layout of each kiosk has been standardized by Park Spirit, we formatted the content and accompanying pictures on each kiosk to engage hikers with interesting and visually appealing information. To design these kiosks, we developed the following research strategies:

1. Collect hiker opinions on existing informational kiosks and the types of historical information they wish to see on new kiosks.
2. Gather historical stories that are relevant to each kiosk's location and the interests of hikers.
3. Structure information on the kiosks in a visually appealing manner using the recommendations from past kiosk design studies and existing successful examples.

We developed and distributed an online survey to 324 people on Park Spirit email aliases to gather hiker feedback. This feedback included the types of historical information hikers find interesting as well as opinions about the design of the seven existing informational kiosks along the trail and visions for the new kiosks. The online survey had a 3.7% response rate, which we attribute to having sent the survey using our school email addresses, rather than Park Spirit addresses. The analysis of the responses showed that hikers are most interested in local historical content and recent events. As shown in Figure 1, the top three most interesting types of historical information were park, architectural, and city history, averaging 4.17, 4.08, and 4.00, respectively. A rating of 1.0 was considered "no interest" while a rating of 5.0 was considered "very interested." Based on these results, we limited our kiosks' content to include information that fell into these categories. Although we had a low sample size for our survey, we recommend that future kiosks also restrict their content to these historical categories.

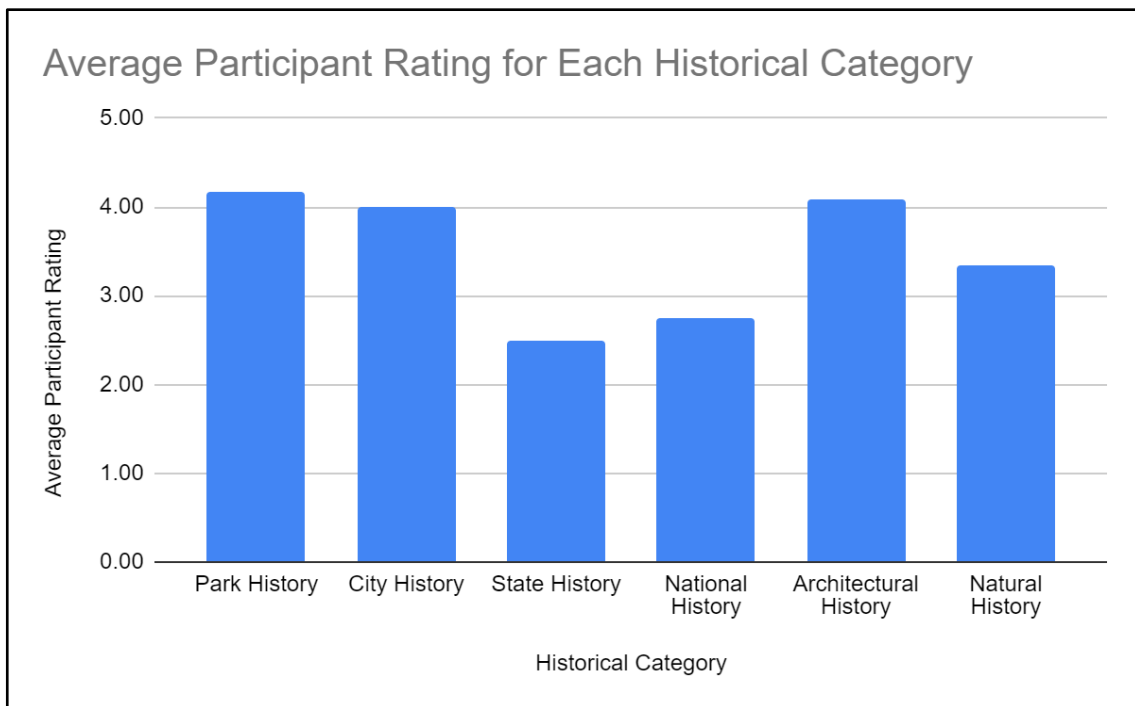**Figure 1:** Comparison of average ratings for each type of historical information, where 1 is "no interest" and 5 is "very interested."

Future research into hikers' interest in history can use these results to research the exact reasons behind hikers' decisions. Our survey focused on the answers hikers gave and did not pursue why hikers answered the way they did. Learning why these categories of history are

interesting would lead to a deeper understanding of what hikers are looking for on these kiosks, allowing kiosks to be further tailored to their needs and desires.

We utilized Worcester's Telegram and Gazette (T&G) as our main source of historical stories. Initial searches for kiosk content on the T&G website were conducted using the park names as keywords. People, places, and events were then noted from the resulting articles, and were used as the keywords for subsequent searches. For each keyword we found, we wrote a description of what the keyword was and its association with the greenspaces. Following the recommendations of Činčera and Švajda (2017), keywords that were found to have little association with the greenspaces or the surrounding area were disregarded, ensuring our kiosks only present information that offers insight into the surrounding land. Similarly, if a keyword detailed information that fell into a historical category not deemed "interesting" from our online survey, the keyword was disregarded. Using the descriptions and greenspace associations, we attempted to find connections between keywords. Keywords that had connections could form the basis of larger sections on the kiosks, while those without connections would be placed in smaller, standalone paragraphs. After forming connections, we found more detailed information and confirmed the accuracy of information found through the T&G by conducting searches on Google with connected keywords.

As shown in Figure 2, the majority of the content that appears on our final kiosks falls into city history, making up 55% of content by word count. A total of 35% and 10% of content fell into the park and architectural history categories, respectively. Though we attempted to display an even amount of information for each of the three categories for each park, the varying availability of information for each park is the result of each park's location and the prominence of those who owned or interacted with the park throughout the years.
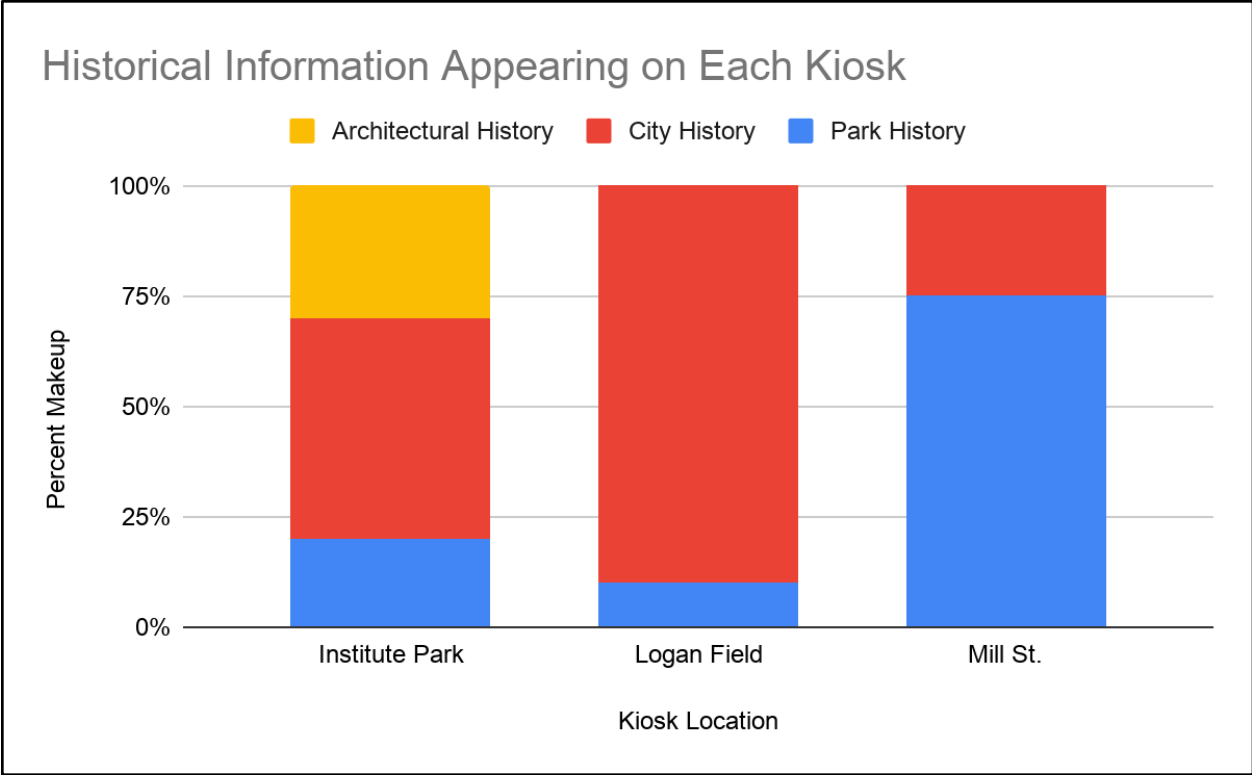
Figure 2: Division of historical content displayed on each kiosk.

Along with the content of our kiosks came the design and formatting. Based on existing research on kiosk design that analyzes word count, time needed to read, and number of pictures, we identified and used two concepts to quantifiably assess our designs: attracting power and holding power; a kiosk's ability to get visitor interactions and keep a visitor reading to completion, respectively.

To make our kiosks visually appealing and engaging, we incorporated features into the kiosks' designs that would increase their attraction and holding powers. These features include themed sections of content, large color variety, large font sizes, and vocabulary suitable for 13-year-olds. The themed sections and color variety serve to increase the attraction power, as large section headers offer hikers more time to gauge their interest in the kiosks by presenting the kiosks' topics from further away, and Jensen (2006) found colorful signs were read more often than monocolor signs. On the other hand, the large font sizes and easy vocabulary increase the holding power by preventing visitors from needing to strain their eyes to read the text and or mull over what certain words mean.

In addition to these features, we achieved a 22.5% reduction in word count compared with the seven existing kiosks, with our kiosks averaging 472.67 words each. Using an average reading speed of 200 words per minute, a holding power of 1.0 is achieved for each kiosk in an average of 2 minutes and 21 seconds. A holding power of 1.0 indicates visitors are reading the kiosks' content entirely. That is, the kiosk is actively engaging visitors.

Our recommendation for future work is to increase the attraction power of the kiosks by making new audiences aware of the East-West trail, which has the added benefit of educating more people on their local and cultural history. Of the 8 online survey participants who indicated they have not hiked any part of the East-West trail, 6 noted that one of the reasons for not doing so was a lack of knowledge of the trail's existence. Davis (2009) found that 80% of first-time visitors and 97% of repeat visitors read informational signs in nature areas. By increasing the number of visitors, the attraction power of the kiosks will rise. This can be performed through social media campaigns or on-the-trail events, similar to Park Spirit's semi-annual guided hike along the trail.

Once installed, the kiosk designs our study produced for Park Spirit will offer East-West hikers insight into the history of the greenspaces around them. By providing hikers this historical information, our kiosks will facilitate a connection to the city and fondness for not only the greenspaces along the trail, but for all greenspaces across Worcester. By enabling this connection, hiker's experience a greater sense of community and can get more enjoyment from the hiking experience along the East-West trail.

1.0 Introduction

The East-West trail is a fourteen-mile long trail in Worcester, Massachusetts that connects twenty greenspaces across the city (Park Spirit, n.d. a). Because the greenspaces are separated by buildings and roads, the East-West trail mixes natural and urban features; connecting the nature paths in the greenspaces using public sidewalks throughout the city. Each of the greenspaces the trail passes through is rich with history. However, East-West trail hikers do not have the opportunity to learn about these greenspaces while hiking, as very little historical signage exists for many of these greenspaces, and signs which do exist only offer limited information (City of Worcester, n.d. a).

To address this issue, the volunteer organization Park Spirit intends to implement twenty-two informational kiosks in the greenspaces of the East-West trail. Although seven of Park Spirit's informational kiosks have already been installed along the trail, no research has been performed to determine the types of historical information that interest hikers or how the kiosks could better engage hikers.

Our study identified historical content of interest to hikers and features to improve visitor engagement to design the three kiosks located in Institute Park, Mill St., and Logan Field. These panels incorporated hiker feedback to decide which types of historical information hikers are most interested in and are structured to present interesting and relevant information in a visually appealing manner. Furthermore, the information presented in our finalized kiosks serves to connect hikers to the land around them, fostering an appreciation for both the natural and urban landscapes throughout Worcester. This connection benefits both hikers, who stand to gain cultural insights and a new perspective on Worcester's greenspaces, and the East-West trail itself, which expands the experience it offers in order to reach new audiences.

The kiosk panels were developed through the combination of feedback from hikers and potential East-West trail visitors, historical records, and the guidance of past kiosk design research. The feedback was collected in the form of an online survey, and asked about trail experiences, opinions on existing kiosks, and expectations for the new kiosks. The survey allowed our study to both make slight alterations in the standardized panel layouts and shift our focus to specific types of historical information when gathering content.

To gather historical information for the kiosks, our study made use of digital records from the Worcester Telegram and Gazette (T&G) newspaper and Google. Because the T&G has been publishing newspapers for Worcester since 1886, it contains information on thousands of events throughout the years (Sutner, 2014). In addition, the T&G is one of the only newspapers that focuses solely on Worcester County, which ensured the content remained relevant to the land around the kiosks. Through searches on the T&G site using greenspace names as keywords, we were able to identify general information on people, places, and events associated with each greenspace. This general information and keywords served as the basis for the content of our kiosks.

In addition, past kiosk design research was used to guide how the historical information is displayed on each kiosk. The recommendations offered by past kiosk design studies affected features such as color variation, word count, and the size of the text and pictures. Then, the recommendations of these past studies were compared to kiosks that have been installed already, offering a perspective on how to implement each feature effectively. All these factors combine to produce kiosk content that is interesting to the hikers, entices them to interact with the kiosk, and encourages them to read the kiosk's contents in detail.

This report begins with an overview of nature hiking, specifically in the United States, and its counterpart urban hiking. We then discuss Park Spirit's association with the East-West trail and how kiosks can create an educational experience. Following the background, our report details how we gathered and utilized hiker feedback, how we performed historical research, and how we designed our kiosk content. We then finish by discussing the results and implications of our study. This research benefits both Park Spirit, who can improve upon their kiosk design process, and East-West trail hikers, who will be given the opportunity to learn about culturally significant history.

2.0 Background

2.1 Hiking in the United States

This section begins with an overview of hiking and its prominence in the United States, as well as the statistics of hiking participants and the economy of the hiking industry, to demonstrate the growing popularity of hiking. We then discuss the concept of urban hiking and how it can be used as an educational tool.

At the start of the 20th century, recreational hiking was a new idea (Forest History Society, 2016). Before this point, the United States was mostly rural with many people living in close connection with nature. As technology advanced and the population grew, urbanization, along with increasing modernization and industrialization, caused rural America to shrink, and reduced the close connection with nature. At this time, hiking started to become a luxury, but it was not until the end of the century that it was recognized as a recreational activity (Forest History Society, 2016). With the increased recognition of hiking came the increased appreciation of nature. Greenspaces, however, have continued to reduce in size since industrialization has spread, leading to the park's movement. On August 25, 1916, Woodrow Wilson created the National Park Service to protect 35 national parks in the United States (National Park Service, 2018). Although these large public spaces were to be used by the masses, wealthy Americans still desired a more private experience, leading to many outing clubs that organized and promoted hiking trips and developed cleared and marked trails, trail maps, and shelters for resting or overnight stays (Forest History Society, 2016).

The use of these trails and parks has continued to grow since their construction. In the early 1950s, the national forests averaged 36 million recreational visitors per year. By the late 1990s, that number had increased to 69 million per year (Forest History Society, 2016). Similarly, in 2006, nearly 30 million Americans were reported to have gone hiking at least once. That number has jumped all the way to almost 48 million Americans in 2018 (Lock, 2020). Although hiking trails are often free to the public, guides and gear are not. In 2017, guided tours and outfitted travel were some of the fastest-growing outdoor-related industries in the United States, valued at $12.9 billion (Bureau of Economic Analysis, 2020). The United States has a widespread interest in hiking and an industry to support it.

2.1.1 Urban Hiking Principles

Unlike traditional nature hikes, urban hiking accounts for the trails and walks that an individual experiences in an urban environment. This not only involves walking in areas that are familiar, such as the neighborhoods that the hikers reside in, but also encourages people to explore the other areas of their town or city. By exploring on foot, urban hiking invokes a sense of exploration that cannot be matched by riding in a confined car, as operating a vehicle requires focus and is relatively fast-paced, contrary to a relaxed walk through both new and familiar areas (Marx, 2008).

A typical urban hike ranges between 5 and 50 miles, in which through signage, kiosks, and wayfinding, the trail is self-guided (Lindsay, 2019). Urban trails lead hikers to historic landmarks, parks and recreation areas, and other notable locations. Rather than venturing through rocky paths in the hills or mountains, urban hikers turn to sidewalks and multi-use paths that connect public roads to unexplored areas of the city (Lindsay, 2019). These creative trails give those who explore them an opportunity to experience the natural and human elements close to where they live and work, providing a unique means of experiencing their city. In doing so, several benefits of urban hiking arise - one of which is the promotion of community and locality (Beatley, 2016). By encouraging people to walk through cities, as opposed to driving through them, urban trails help residents find recreation within their own community.

In addition to recreation, many urban trails promote local communities through educating hikers about the history of places and sights along the trail. The local history that can be provided along an urban hiking experience can give communities information that other sources would pay no attention to, as history textbooks typically do not do justice for the history of small communities. As an example, during World War 1 a small town in Ohio saw its population rise from 14,000 to 54,000 people (Field, 2017). When looking at national history, these facts would be overlooked, but for the people that lived in this town, their livelihood would be changed forever as their population nearly quadrupled over the course of a few years. The inclusion of an urban trail in this town would allow both tourists and locals to learn about what town life was like during that period, offering information and perspectives that textbooks and other resources would not focus on. Learning about the history of the area around the trail allows hikers to connect with the community, creating an appreciation for the people, places, and events that impacted the land. Without resources like urban trails, much of the in-depth history of towns and

cities would remain unknown.

2.2 Park Spirit and the East-West Trail

The benefits of urban hiking trails are not reserved solely for small towns, but large cities as well. In this section, we start with a brief overview of the volunteer organization Park Spirit and their involvement in the Worcester community. We then detail the history of the East-West trail and two of its greenspaces in order to illustrate the problem the trail is facing. Finally, we discuss the usage of informational kiosks along the trail as a solution to the trail's issue.

The volunteer organization Park Spirit was founded in the late 1980s by Worcester park commissioner Tom Taylor (Laurie, 2015). Park Spirit was designed to be an advocacy group, working to promote and support all 60 Worcester parks (City of Worcester, n.d. b). In addition to assisting with funding and management of the parks, throughout the year Park Spirit hosts guided hikes to increase awareness of what Worcester's parks have to offer (Park Spirit, n.d. b). One such hike is known as the "Hike the Heart" (HtH) campaign, which is offered several times throughout the year. HtH promotes hiking trails in the heart of Worcester and has seen over 150 hikers participate since its inception in 2016 (Park Spirit, n.d. c). Unlike other trails in Worcester, the route taken by HtH passes through numerous parks along a larger trail route known as the East-West trail.

2.2.1 East-West Trail

The East-West trail is a fourteen-mile partially urban trail connecting twenty greenspaces across Worcester (Park Spirit, n.d. a). The East-West trail is defined as "partially urban" because it mixes natural and urban features while passing through distinct and unconnected greenspaces. To pass from one greenspace to another, the trail route uses public sidewalks, crosses roads, and passes near residents' houses (see Figure 1). While such a design may seem counterintuitive to the idea of hiking in nature, the non-greenspace portions of the trail increase usage by offering numerous areas to start and finish the hike, allowing the trail to be hiked in discrete sections that suit the ability of those hiking (Kane, 2015). The trail also gives Worcester residents a convenient place to hike within the city.
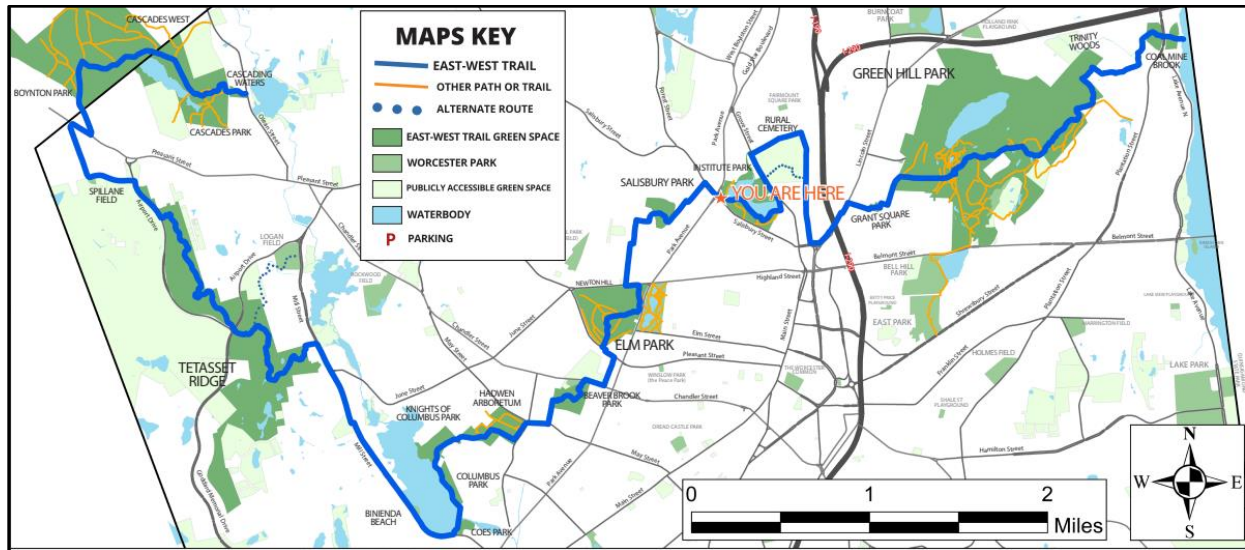
Figure 1: Map of the East-West trail (Park Spirit, n.d. d).

The planning of the East-West trail began in 2001 with the goal of promoting Worcester's parks and greenspaces. It was through the efforts of Colin Novick, the executive director of the Greater Worcester Land Trust, and Rick Miller, a board member for Park Spirit, that the first section of the trail was constructed in Elm Park (Greenslit, 2016). In 2014, the trail route was finalized and approved by Park Spirit's board of directors. By August of 2016, the trail was completed and opened to the public. Today, the East-West trail offers twenty greenspaces across Worcester (Park Spirit, n.d. c). Two popular greenspaces along the trail are Green Hill Park and Elm Park.

Green Hill Park, one of the greenspaces the East-West trail passes through, is the largest park in Worcester. Spanning nearly 500 acres, the park contains a golf course, a farm, sports amenities, and a beach (City of Worcester, n.d. c). In 1713, a group of settlers bought eight square miles of land from the Massachusetts Bay Colony for farming. Over the next 200 years the surrounding land was bought and the farm was developed into a large estate. In December of 1905, the land was officially purchased by Worcester and dubbed the Green Hill Park, named after the Green family who previously owned the land (Park Spirit, n.d. e). Since then, the park has been continually developed into the sprawling greenspace it is today.

Elm Park, another greenspace along the East-West trail, is significantly smaller than Green Hill Park, at only 60 acres. The land for Elm Park was purchased in 1854 and is considered one of the first instances of a city purchasing land explicitly for a public park in the

United States. Between 1874 and 1888, the park was redesigned by the same firm that designed Central Park in New York City. Elm Park symbolizes the ideals of a "progressive city looking to preserve open space for the enjoyment of its citizens," and was designated a National Historic Landmark in 1970 (City of Worcester, n.d. a). Today, it includes a pond that is used as an ice-skating rink in the winter, a playground, basketball and tennis courts, and miles of hiking trails (City of Worcester, n.d. a).

While Green Hill Park and Elm Park are rich with history, the average park visitor is unaware of it. For example, a plaque in Elm Park notes the names of the land's original owners and the date the city bought the land from them (City of Worcester, n.d. a). This plaque makes no mention, however, of the park's expansion, development, and history since it was bought. Park visitors and hikers along the East-West trail do not have the opportunity to learn of the history of Worcester's parks in a simple and convenient manner. One means of conveying the history of these parks to their visitors is with informational kiosks.

2.2.2 Informational Kiosks Along the East-West Trail

For the purposes of educating hikers on the greenspaces along the East-West trail, Park Spirit has begun creating informational kiosks for the East-West trail. These kiosks, which will be placed in the greenspaces along the trail, detail the history of the areas they are in through pictures and written content. To measure how effective these kiosks are at conveying historical information to hikers, two concepts are used: attracting power and holding power.

The attracting and holding powers of a kiosk are measures of visitor interactions. The attracting power of a kiosk is the percentage of visitors who stop at a kiosk. The holding power is the ratio of the average time spent reading the kiosk to the estimated time required to read the kiosk in its entirety (Davis, 2009). The formulas for each attracting and holding power are shown in Figure 2.

$$\text{Attracting Power} = \frac{\text{Number of Visitors Who Stop at the Kiosk}}{\text{Total Number of Visitors Who Pass By the Kiosk}} \times 100$$

$$\text{Holding Power} = \frac{\text{Average Time Spent By Visitors Reading the Kiosk}}{\text{Time Needed to Fully Read the Kiosk}}$$

Figure 2: Attracting and holding power formulas for kiosks.

These powers provide quantifiable goals for kiosk designs. Kiosks that have a lower attracting power have fewer visitor interactions than those with higher attracting powers. A kiosk that has a lower holding power has fewer visitors reading the entirety of its content than one with a higher holding power. While the ideal kiosk has an attraction power of 100% and holding power of 1.0, a typical kiosk has an attraction power of 30-40% and a holding power of 0.50 (Činčera & Švajda, 2017).

Of the nine kiosks which have yet to be designed, our study aims to create the panels for the Institute Park, Mill St., and Logan Field locations. The creation of these panels was achieved through incorporating the opinions and feedback of hikers and visitors, research done through Worcester newspaper archives, and adherence to kiosk design studies to provide interesting, relevant, and visually appealing content.

3.0 Methodology

The goal of our project was to select and structure the content of three kiosks which Park Spirit will install along the East-West trail. These kiosks will enhance the hiking experience of the East-West trail by educating hikers on the history of Worcester's greenspaces. In addition, although much of the layout of each kiosk has been standardized by Park Spirit, the historical content and accompanying pictures on each kiosk were formatted to engage hikers with interesting and visually appealing information. In order to achieve this goal, we developed the following research strategies:

1. Collect hiker opinions on existing informational kiosks and the types of historical information hikers wish to see on the new kiosks.
2. Gather historical stories that are relevant to each kiosk's location and interest hikers.
3. Structure information on the kiosks in a visually appealing manner using the recommendations of kiosk design studies and existing successful examples.

In this chapter, we detail the methods utilized to gather and analyze feedback from hikers, and how the results of that analysis were incorporated into the final kiosks we developed.

3.1 Incorporating Hiker Feedback and Opinions

To better guide our kiosk designs, we collected information from hikers about their interaction and impressions of existing kiosks. We also gathered data about what types of information hikers would like to see on new kiosks. This section details our approach to gathering and analyzing this information, why our approach is best suited for this situation, as well as how this information will be applied towards a finalized kiosk. We conclude by examining challenges and limitations we faced and how we mitigated their impact.

The purpose of the kiosks on the East-West trail is to provide an educational benefit to the East-West trail experience. Because some kiosks are already designed and implemented, gathering feedback from hikers about the existing kiosks allowed our study to replicate favorable features and avoid unfavorable features that other kiosks implemented. This information shaped our selection of content and informed us about which features worked and which did not.

To gather this information, we created a hiker survey (see Appendix A) designed to get information from hikers registered with Park Spirit, regardless of whether they have previously hiked the East-West trail. We sent the survey to 324 people through Park Spirit email lists using an online google form. The results were then compiled into a Google sheets document. The survey had a structured format, with some open-ended questions, but mostly discrete answer choices, and was split into eight sections, the first of which is the survey's preamble. Section 2 collects demographic information, specifically age range, gender, and what town and zip code they live in. Section 3 asks if they have ever hiked the East-West trail before. Those who answer yes are directed to section 4, while those who answer no are directed to section 5, which asks why they have not hiked the trail before. Section 4 asks what sections of the trail they have hiked, how often, as well as positive and negative impressions of their experience. The last question of this section asks about existing kiosks along the trail, and if they have ever interacted with one of them. Answering yes to this question directs them to section 6, which asks specific questions about their experience with the kiosk, where they were located, and any suggestions they might have to improve upon the kiosk's design. The bulk of our data collection comes in section 7. Here, we ask participants to rate six historical categories on a scale of 1-5 based upon their interest in seeing that kind of material on a kiosk, where 1 is "no interest" and 5 is "very interested." The categories include Park History, City History, State History, National History, Architectural History and Natural History. The last section, section 8, asks for any comments/concerns they might have or if they would like to receive a copy of the results at the conclusion of the study. Once data was collected from the survey, the resulting feedback was analyzed by looking at the average rating of each category in section 7 to determine what participants are most interested in. The top three highest-rated categories were then chosen as the focus for the content for our kiosks.

There are many challenges and limitations that arose from this approach. The most prominent challenge, however, was receiving feedback during this chaotic period, as many citizens of the United States have been confined to their homes in quarantine because of the ongoing Covid-19 outbreak. As a result of this, we emailed our survey to individuals registered with Park Spirit. Ideally, we would have performed this survey at the existing kiosks along the East-West trail, using the passing hikers as our participants. Furthermore, although Alpher et al. (2017) found monetary incentives increase the response rate of surveys, our survey offers no

monetary incentives. And emails, especially as companies transition to remote work amidst this viral outbreak, are easy to ignore. To increase the response rates, we sent our survey to as many people as we could and ensured that those who had not hiked the East-West trail could participate. In the emails we sent out, we also encouraged participants to forward the survey to others who might be interested in the East-West trail, as the trail is open for public use.

3.2 Gathering Historical Information

Regardless of which types of history hikers find interesting, information needs to be gathered to be displayed on the kiosks. This section explains how our study compiled historical information, why we chose this approach, and the drawbacks of using our method.

In order to gather historical information, our study made use of the digital archives of the T&G, one of the only newspapers focusing solely on Worcester County. The first round of searches was performed on the T&G site using the names of each kiosk's associated greenspace as keywords. The results of this search were sorted in chronological order by publishing date, with the oldest articles listed first. The T&G site also allowed us to filter the results such that an article only appeared if it was categorized as "news," "town news," or "obituary," limiting the amount of irrelevant information. We then noted people, places, and events that appeared throughout the articles, and wrote a description of their significance and association with the greenspaces.

A second round of searches using the T&G was conducted in a similar manner to the first, though utilizing the people, places, and events from the first round as keywords instead of the names of the greenspaces. During the second round, we did not note repeat keywords and did not pursue articles that appeared during the first round. For both rounds, if it was determined that a keyword would not yield historic results that are relevant to the greenspace, we did not pursue articles using that keyword. For example, the T&G recently published an article on a historic house that is for sale in Worcester. This article appeared during the first round of searches for the Institute Park kiosk. However, the only mention of Institute Park in this article is to say that the house is a 10-minute walk from the park (LaPlaca, 2020). We determined this article to have little relevance to Institute Park, if any, and disregarded its keywords from the second round.

We chose to gather information this way for two reasons. First is the time scale of available resources. The T&G has been publishing newspapers for Worcester since 1886 (Sutner,

2014). Although many articles from before the era of digital archives have been lost, articles on the T&G site extend well into the 1900s, offering us a wide variety of information.

The second reason we relied upon the T&G is that it is a local news agency. Unlike state or national news agencies, the T&G focuses most of its articles on Worcester County. And although other local news agencies exist, none of them exclusively cover Worcester County, instead opting to report news for towns across Massachusetts. Because the T&G reports on local news, our searches yielded content that is applicable to the area around the kiosks. Similarly, when referring to state or national news, the T&G elaborates on how larger issues affect the local community, or vice versa where applicable. By tying issues and events to the local area, the T&G allows information to be gathered from all six of our historical categories from section 3.1, diversifying our compilation.

One of the drawbacks of using the T&G is the lack of detail most of its articles provide. Many articles do not provide context for why events are happening. Instead, they serve to report what has happened as a statement of fact, only going so far as to include quotations from people associated with the article's topic. To compensate for this lack of information, we took two steps. First, we performed Google searches on each keyword to both expand upon and confirm the accuracy of information gathered from the T&G. And second, we drew connections between keywords. Because we were already writing brief descriptions of what each keyword is and its relevance to the greenspaces, we could group related keywords together to identify large themed sections for our kiosks. The keywords that could not be related to others were placed in smaller sections. For example, enough historical information was found relating to Worcester Polytechnic Institute for multiple paragraphs of content, while very little information about the Worcester Regional Airport led to only one paragraph of content.

An additional drawback to our method comes from the timing of when these searches were performed. Because of the limited time we had to perform this study, we gathered historical information as we were receiving the results from our online survey outlined in section 3.1. Because we had yet to determine which of our six historical categories were most interesting, we pursued information regardless of which category it belonged to. After receiving the results of our online survey, we were left with large amounts of information that did not fall within an "interesting" historical category, which became irrelevant. The only strategy to limit the amount

of wasted effort is to conduct the searches after the survey results were analyzed. This would prevent anyone from researching content that would not be of interest to hikers.

3.3 Formatting Content to be Visually Appealing

To increase the likelihood of hikers both interacting with and enjoying our kiosks, the information we positioned on the kiosks was designed to both grab the attention of hikers and keep them engaged. This section outlines how we incorporated recommendations from past kiosk design research to increase the kiosks' attraction and holding powers, the benefits of comparing that advice to already-implemented kiosks, and a limitation of this approach.

Past research on kiosk designs has identified numerous factors which affect the attracting and holding powers. Barettino, Gallego, and Wimbledon (2000) recommend that the ratio of image, text, and whitespace is 2:1:1, and the vocabulary be suitable for comprehension by 13-year-olds. Other factors which influence attracting and holding powers include color variation, the information's relevance to the area around the kiosk, readability, and adherence to a theme (Ballantyne & Hughes, 2003; Činčera & Švajda, 2017; Jensen, 2006; Sandifer, 2003;). While formatting content and selecting pictures for our kiosks, we implemented factors that improved the attraction and holding power of the kiosks.

In order to improve upon our designs and clear up any ambiguity, we compared the factors found in the kiosk design studies with how they appear on popular kiosks. Of particular focus for our study was kiosks along the Appalachian Trail. Because this trail was established just over 80 years ago, and because over 3 million hikers visit the trail every year, the kiosks installed along the trail reach a wide audience (Appalachian Trail Conservancy, n.d.). The Appalachian Trail Conservancy (ATC) is an organization that installs and maintains informational kiosks at trailheads along the Appalachian Trail. An example of one such kiosk is shown in Figure 3. What we observe in Figure 3 is a large color variety and, although difficult to read in this report, content that both follows a single theme and is relevant to the local area. Thus, this trailhead kiosk implements many of the features the design studies advocate for.
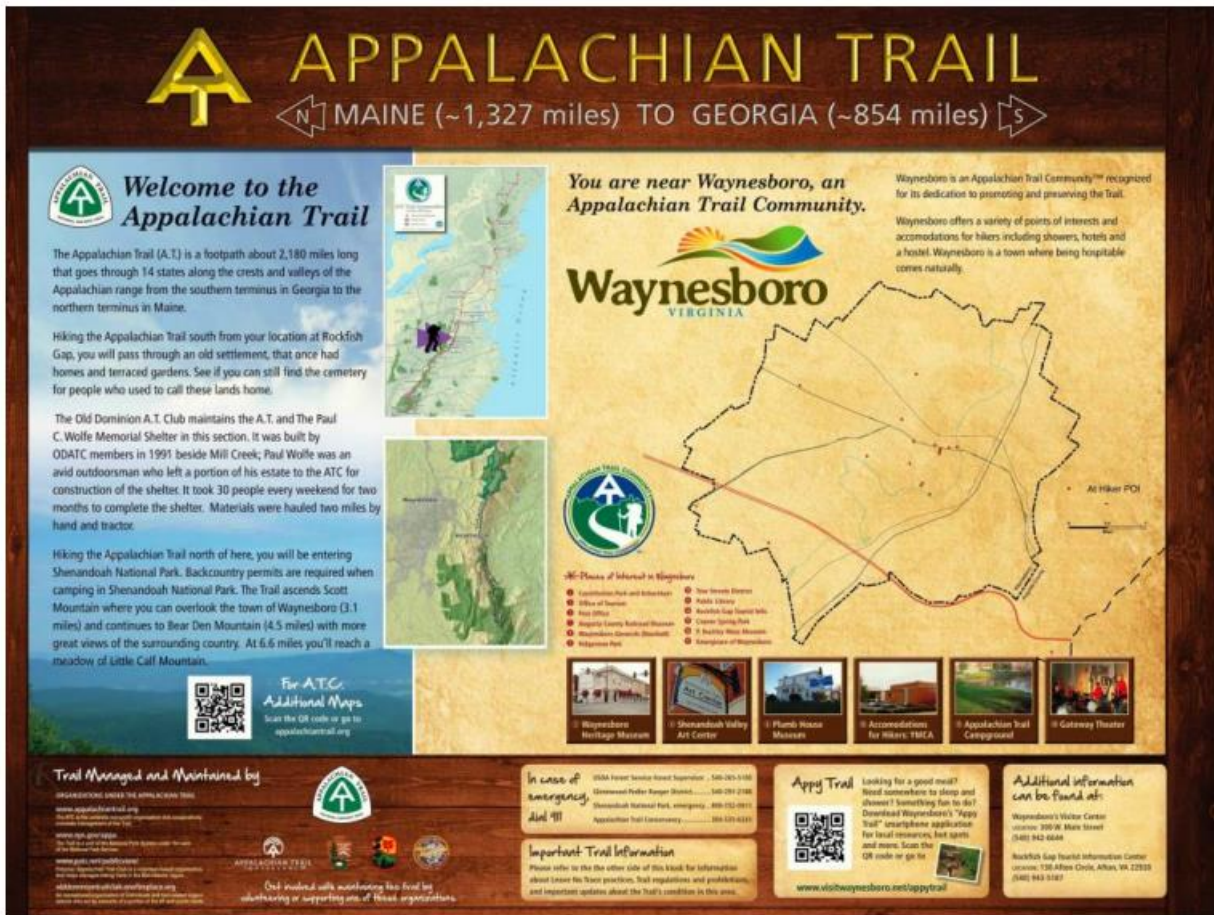
Figure 3: Appalachian Trail kiosk design template (ATC, 2012).

Although this approach leads to higher attraction and holding powers, a limitation arises from Park Spirit standardizing many aspects of the kiosk design. Because we were unable to edit much of the kiosks' design, we could not receive the full benefit of implementing the power-increasing features. Instead, we could only use these features in the editable areas, reducing their effect.

4.0 Results and Analysis

In this section, we present and analyze the results of our three research strategies and explain how each result influenced the design of our kiosks. In section 4.1, we examine the results of our online survey questions about interest in varying types of history and offer recommendations for future work and research on the kiosks. In section 4.2, we divide our

kiosks' content into three historical categories: park, city, and architectural, and explain why the content appears this way. Finally, in section 4.3, we discuss features that influence the kiosks' attraction and holding powers, elaborate on the effects of each feature's implementation, and explain how future work can improve the kiosks' features.

4.1 Gauging Interest in Different Types of History

By analyzing data gathered from our online survey, our study was able to determine that the types of information that past and potential East-West hikers are most interested in are those that focus on the local area and more recent events. This allowed us to focus the content of our kiosks on topics that interest hikers.

We sent the survey to 324 people and received 12 responses for a 3.7% response rate, with only 4 of the participants having hiked the East-West trail in the past. This low response rate may be the result of a lack of trust in the survey, as we distributed the survey using our school email addresses, as opposed to Park Spirit addresses. As shown in Figure 4, the top three types of historical information were park, architectural, and city history, averaging 4.17, 4.08, and 4.00, respectively. Our survey did not ask participants to explain the reasons for the way they rated the six categories. As to why these categories are rated higher than the others, we have come up with two theories.

One theory for these results is that they all focus on the immediate area surrounding the kiosk. All three of these types of information refer to people, places, and events that are relatable on a community level. That is, these forms of information are more tangible and relevant to the locals than the remaining types.
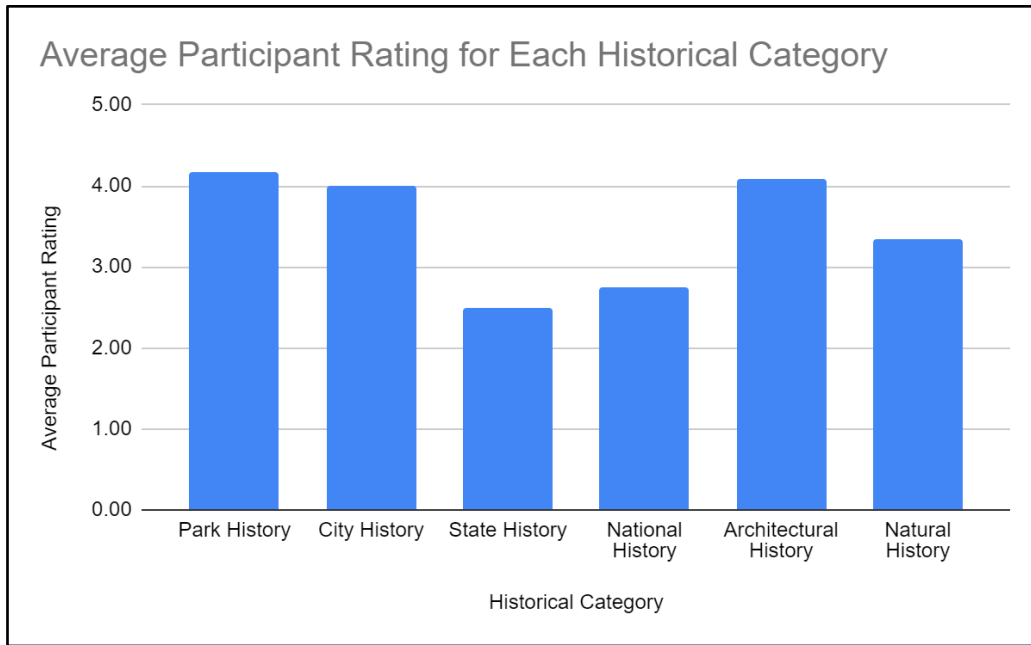
Figure 4: Comparison of average ratings for each type of historical information, where 1 is "no interest" and 5 is "very interested."

The second theory as to why park, city, and architectural history are highly rated is the perceptions respondents have on the time scale of all six historical categories. The information each category offers spans a different length of time. Park, city, and architectural history have the shortest spans among the categories. Because the first public park in Worcester was constructed in 1854, park history is easy to visualize as referring to relatively recent events (City of Worcester, n.d. a). Worcester was first established as a town in 1722; however, it would not be until 1848 that it would finally be designated as a city (City of Worcester, n.d. d). Similarly, many of the historic buildings in Worcester's parks were either built when the park was established or around the time Worcester became a city. As such, city and architectural history are on a similar time scale to park history. On the other hand, state and national history stretch back into the 1600s and 1500s, respectively, and natural history is on the scale of thousands of years.

Future research into hikers' interest in history can try to better understand hikers' decisions. Our survey focused on the answers hikers gave and did not pursue why hikers answered the way they did, and a larger sample size may produce different results. Learning why these categories of history interest hikers would lead to a deeper understanding of what hikers

are looking for on these kiosks, which has the benefit of allowing kiosks to be further tailored to their needs and desires.

4.2 Breaking Down the Content of Each Kiosk

Based on the results of our online survey, we were able to narrow down the types of historical information that interest East-West hikers the most: park, city, and architectural history. Using the T&G, we were able to find varying types and quantities of information that fell into these historical categories for each kiosk. For Institute Park, nearly all the information we found detailed the lives of prominent people who had an impact on the land around the park, namely John Boynton, Ichabod Washburn, and the Salisbury family. Other information for Institute Park was related to a memorial stone tablet, recently built walkway, and nearby intersection. For the Logan Field kiosk, the available historical information depicts the life of James Logan, for whom the park is named after, Marshall Silverman and his contributions to youth baseball in Worcester, for whom a baseball diamond is named after, and the nearby Worcester Regional Airport. And for Mill St., the information focuses on the history of the nearby Coes Pond, and Tetasset Ridge and God's Acre greenspaces. Overall, we were able to gather a variety of information for each of these kiosks.

As shown in Figure 2, most of the content that appears on our final kiosks falls into city history, making up 55% of content by word count. A total of 35% and 10% of content fell into the park and architectural history categories, respectively. Though we attempted to obtain an even amount of information for each of the three categories for each park, the varying availability of information for each park is the result of each park's location and the prominence of those who owned or interacted with the park throughout the years.
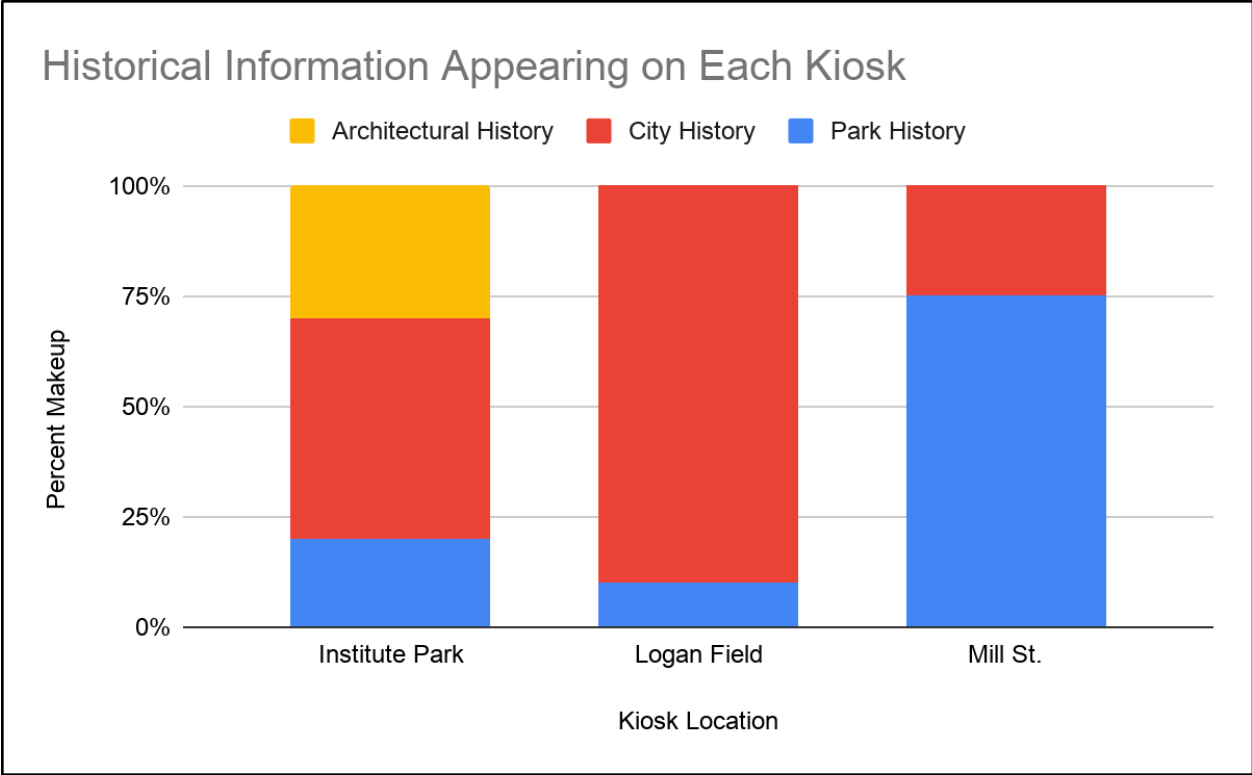
Figure 5: Division of historical content displayed on each kiosk.

Institute Park is located next to Worcester Polytechnic Institute (WPI), which leads to much of the kiosk's content relating to WPI. Institute Park contains the most architectural history because of the detailed information available on the many WPI buildings and because of a recently built memorial trail. WPI's buildings are named after their donors or in memory of someone who greatly impacted the school. For instance, Washburn Labs and Boynton Hall are named after the school's two founders, and Salisbury Labs, which the Salisbury family donated money to build, is named for Stephen Salisbury II. With these buildings comes information about the lives and impact of those who they are named after, which increases the amount of city history present on the kiosk. Some of the park history we found, too, relates to the school, as Salisbury II donated 5 acres of land for the park. Other park history, however, recounts what the park was like before the land was donated and the recent revitalization of parts of the park. The large amount of city history comes from the people who interacted with WPI and the surrounding land. As a result of Institute Park's proximity to WPI, most of the kiosk's content details city and architectural history.

Unlike Institute Park, information on Logan Field is heavily influenced by two people for whom parts of the park were dedicated to. Logan Field gets its name from Worcester's 35th mayor, James Logan. Because he was a popular public figure, a large body of information exists about his life. The information examines Logan's immigration to the United States, his entry into politics, and his involvement in the playground movement. Similarly, one of Logan Field's baseball diamonds was dedicated to Marshall Silverman, who was a team coach, served as president, and organized sponsors and funding for youth baseball in Worcester (City of Worcester, n.d. e). Additional information for Logan Field briefly explores the history of the nearby Worcester Regional Airport. These three topics, James Logan, Marshall Silverman, and the airport, became the centerpiece of our kiosk, leading to a large percentage of city history.

The Mill St. kiosk is unique because, unlike the other three kiosks, it is not located in a greenspace. Instead, the Mill St. kiosk is located near Coes Pond, God's Acre, and Tetasset Ridge, which are the focus of the information. The information is evenly split amongst these three topics. For Coes Pond, the kiosk mentions the John J. Binienda Memorial Beach and touches on the life of former Massachusetts State Representative John J. Binienda. Other information details land being deeded to God at God's Acre and Tetasset Ridge's association with the Tetasset Native American tribe. Because we covered two greenspaces on one kiosk (God's Acre and Tetasset Ridge), the Mill St. kiosk has a high percentage of park history.

Along with all the information falling into the top three historical categories, we also focused on content in accordance with Činčera and Švajda (2017), who recommend all content be relevant to the area around the kiosk. Except for the Mill St. kiosk, which is not located within a greenspace, all content refers only to people, places, and events that had a direct impact on each kiosks' greenspace or the area immediately surrounding the greenspace. By following this recommendation, our kiosks present information that offers insight into the land around the kiosk, enhancing the experience offered by the East-West trail.

4.3 Increasing Attraction and Holding Powers

One goal of our kiosk designs was to increase the attraction and holding powers. Though the exact attraction and holding powers cannot be determined before the kiosks are installed along the East-West trail, as they require observing visitor interactions over time, our study produced kiosk designs that incorporate power-increasing features. Such features were included

through both hiker feedback on existing East-West kiosks and the advice of several kiosk design studies.

Of the twelve responses we received on our online survey, 4 participants indicated that they have interacted with East-West kiosks at least once. 2 participants who interacted with East-West kiosks noted that the existing kiosks would be improved through alterations to the text, which includes increasing the font size and decreasing the amount of text. One of these participants also noted that increasing the number of pictures would help. All these suggestions decrease the total time needed to read the entire kiosk, which makes it easier to achieve high holding powers. After following these suggestions, our kiosks were left with an average of 472.67 words per informational panel (IP). Each kiosk has two main panels: a trail map, the design of which was standardized, and an IP, which was the editable section that contained our historical content. We make the distinction between the IPs and map panels to simplify calculations. An example of an IP can be seen in Figure 6. Meanwhile, the average word count per IP for the kiosks Park Spirit has already designed is 609.83. This means our kiosks have 22.5% fewer words per IP than the existing signs, allowing room for larger text and more pictures. And, because the average reading speed of an American adult is 200 words per minute, a holding power of 1.0, which indicates visitors have read the content in its entirety, can be achieved for each section in 2 minutes and 21 seconds (Ziefle, 2010).

Figure 6: Informational panel for our Logan Field kiosk.

The attracting power of the kiosks was also influenced by the reduced word count. The increased space offered by the reduced word count not only led to the font size of the paragraphs being increased, it also allowed us to increase the size of the section headers and pictures while maintaining ample whitespace. The large section headers are readable from further away than

smaller headers. By increasing the distance at which the kiosk topics are readable, hikers are given more time to decide whether to stop at a kiosk. On paved trail sections, this increases the likelihood of cyclists and runners stopping to read the kiosk, as they would otherwise be moving too fast to attempt to read smaller section headers. This aligns with the advice of Sandifer (2003), who notes that text should be compartmentalized in easily understood sections, and Ballantyne and Hughes (2003), who explain that the content of signage should follow a single theme. By having large headers, the topic and extent of each section is emphasized. In addition, the content in each section follows the theme presented in the header. And, with the reduced word count and increased font size, the content within each section becomes easier to read.

Working in a similar manner, the size of the pictures on the kiosks were able to be increased. This led to the same scenario as with increasing section header sizes: visitors can gauge interest in the kiosk from a further distance away. In addition, increased picture sizes allowed for a wider range of images to choose from. Figure 7 shows an exaggerated comparison of one of the images included on our Logan Field kiosk. The signature on the left image is clearly legible, whereas the image on the right is far more difficult to read. When selecting pictures for the kiosks, images like those presented in Figure 7 could only be included because of the extra space gained from the reduced word count.
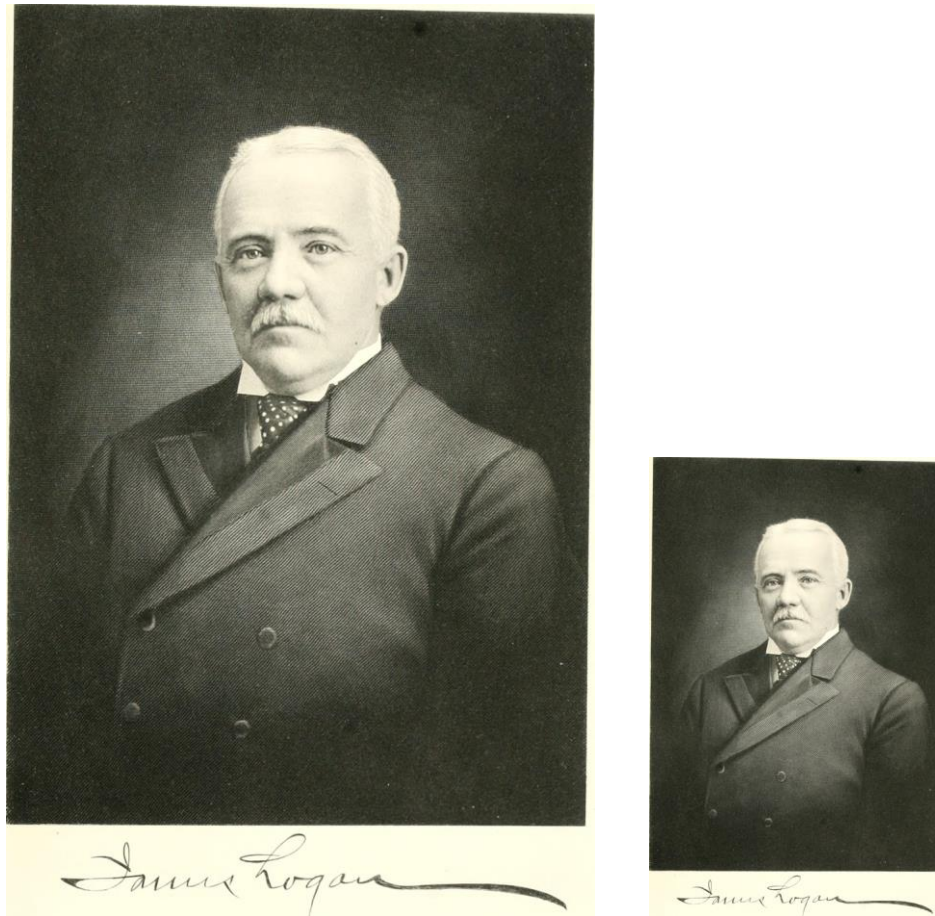
Figure 7: Comparison of legibility between full (left) and quarter-sized (right) images.

In addition to selecting a larger variety of pictures, larger pictures introduce color variability in the otherwise-standardized kiosks. Jensen (2006) explored the effects of color variety in both the text color and the use of colored pictures and found that a greater color variety was associated with an increase in attraction power. Due to many aspects of the kiosk designs being standardized by Park Spirit, however, our study cannot include colored text. Thus, the color variety offered by the large pictures is used to supplement the lack of variety throughout the text. Ultimately, the large images increase the attracting power, improving the chances of visitors interacting with our kiosks. Final versions of each kiosk can be found in Appendix B.

For future work, one means of increasing the attraction power of the kiosks is to make new audiences aware of the trail. Of the 8 online survey participants who indicated they have not hiked any part of the East-West trail, 6 noted that one of the reasons for not doing so was a lack of knowledge of the trail's existence. Davis (2009) found that 80% of first-time visitors and 97%

of repeat visitors read informational signs in nature areas. By increasing the public's awareness of the trail, the number of visitors, and thus the attraction power as well, will rise. This can be performed through social media campaigns or on-the-trail events, similar to Park Spirit's semi-annual guided hike along the trail.

5.0 Conclusion

Our study aimed to address the problem of not knowing what hikers want to see on the kiosks and how to best design our information panels. Through our online survey, scouring the T&G's digital records and Google, and following the guidance of previous studies, we narrowed down the focus of historical content on the kiosks and adopted strategies to increase the number of and improve visitor interactions. We have also developed a number of recommendations for future work surrounding this area and similar topics.

The results of our online survey have led our team to **recommend that Park Spirit focuses the content for future kiosks on park, city, and architectural history**. Our survey gathered information about hikers' interests in certain types of history surrounding the East-West trail. The top three categories of historical content from our survey, in order from highest rated to lowest, were park, architectural, and city history. We believe this is a result of these categories detailing the history of the community, as well as the viewpoint that events within these categories occurred more recently than their state, national, or natural counterparts. To expand upon the results of our survey, we **recommend future research be performed into the reasoning behind hikers' responses to our survey**. A better understanding of their responses will allow for an even more tailored kiosk design.

With the analyzed results of our online survey, we **found varying types of information for each kiosk based upon their location and history**. The bullets below provide a short recap of the information appearing on each kiosk:

Institute Park: This kiosk focuses on prominent people who had an impact on the land around the park; in particular, multiple individuals associated with the nearby WPI are mentioned. Besides the people involved, our kiosk covers an assortment of information regarding nearby points of interests.

- ○ John Boynton
- ○ Ichabod Washburn
- ○ The Salisbury Family
- ○ George Bancroft
- ○ Recently built walkway
- ○ Nearby intersection

<u>Logan Field:</u> This kiosk focuses on two significant individuals with a profound impact on the park and the local community. The park was named after the first person, and the second contributed years of coaching and funding to the local Little League. Additionally, the kiosk covers the airport located nearby.

- ○ James Logan
- ○ Marshall Silverman
- ○ Worcester Regional Airport

<u>Mill St:</u> This kiosk covers the history of numerous nearby greenspaces. Many of these greenspaces have a rich history with interesting local connections that are explored on this information panel.

- ○ John J. Binienda Memorial Beach
- ○ Tetasset Ridge
- ○ God's Acre

Just over half of the information we included on all of the kiosks covered city history despite our efforts to display equal amounts of park, city, and architectural history. This was a result of the greenspace's location and the lives of those who were involved with the park.

Our research into **increasing the attraction and holding powers of our kiosks led us to incorporate many power-increasing features**. Additionally, our survey provided us hiker feedback to improve both of these powers. Suggestions such as reducing the amount of text and including larger pictures effectively reduce reading time and increase the chance of hikers stopping to read. We **recommend Park Spirit increases awareness of the trail**. Our survey results indicated many community members were unaware of the trail's existence. Increasing the number of visitors will directly improve the number of kiosk interactions, increasing the attraction power of the kiosks. Spreading awareness could be done with emails to local hikers, fliers on the campuses of nearby colleges, or social media campaigns.

We hope our research will improve the experience of those hiking along the East-West trail and guide Park Spirit in future kiosk design. It was our goal to develop engaging and interesting kiosks. With technology advancing as it does, our group has contemplated the

possibility of electronic kiosks to further improve the trail experience. The development of such kiosks could be costly but beneficial in updating the modernity of the park and kiosks. However, sometimes simple is better, and bringing technology into an activity that focuses on nature could be counterproductive. Whatever the direction, we hope the East-West trail continues to provide an enjoyable and memorable experience to all those who hike it.

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Appendix A: Screenshots of Online Survey Google Form

Section 1: Preamble

East-West Trail Informational Kiosks

We are a group of students from Worcester Polytechnic Institute and are working with Park Spirit to develop informational kiosks that will be installed along Worcester's East-West trail. Currently, we are conducting a survey of the surrounding community to better understand hiker experiences with the trail, and what types of information are most appealing.

Your participation in this survey is entirely voluntary, and you may withdraw or choose not to answer a question at any time. The survey should take 5-10 minutes to complete. Please remember that your answers will remain anonymous. No names or identifying information will appear on the survey or in any of the project reports or publications.

Park Spirit will use this information to guide kiosk designs and determine who is using the trail. If interested, a copy of our results can be provided through an internet link at the conclusion of the study. Your participation is greatly appreciated.

Next

Section 2: Demographic Information

East-West Trail Informational Kiosks

Demographic Information

What is your age?

○ < 18

○ 18 - 20

○ 21 - 30

○ 31 - 40

○ 41 - 50

○ 51 - 60

○ 61+

What is your gender?

Choose ▾

In what town do you live?

Your answer

In what zip code do you live?

Your answer

Back   Next

Section 3: East-West Trail General Questions

East-West Trail Informational Kiosks

East-West Trail General Questions

Have you hiked along the East-West Trail before, either in its entirety or in sections?

- ◯ Yes
- ◯ No

[Back]   [Next]

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Section 4: East-West Trail Hiking Experiences

East-West Trail Informational Kiosks

East-West Trail Hiking Experiences

If you have hiked the East-West Trail in sections, please indicate which sections you have hiked

- ☐ Coal Mine Brook
- ☐ Trinity Woods
- ☐ Green Hill Park
- ☐ Grant Square Park
- ☐ Rural Cemetary
- ☐ Institute Park
- ☐ Salisbury Park
- ☐ Newton Hill at Elm Park
- ☐ Beaver Brook Park
- ☐ Hadwen Arboretum
- ☐ Knights of Columbus Park
- ☐ Columbus Park
- ☐ Coes Park
- ☐ John J. Binienda Memorial Beach
- ☐ Tetasset Ridge
- ☐ John W. Spillane Field
- ☐ Boynton Park
- ☐ Cascades West
- ☐ Cascades Park
- ☐ Cascading Water

How many times have you hiked all of or sections of the East-West Trail?

Your answer

How often do you hike all of or sections of the East-West Trail?

Your answer

How did you find out about the East-West Trail?

Your answer

What did you enjoy about the East-West Trail hiking experience?

Your answer

What did you not enjoy about the East-West Trail hiking experience?

Your answer

Have you ever interacted with any of the existing informational kiosks along the East-West Trail?

○ Yes

○ No

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Section 5: New Hikers

East-West Trail Informational Kiosks

New Hikers

Please provide one or more reasons as to why you have not hiked the East-West Trail

Please separate reasons with a semicolon

Your answer

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Section 6: Kiosk Interaction

East-West Trail Informational Kiosks

Kiosk Interaction

In which park was the kiosk located?

- ☐ Coal Mine Brook
- ☐ Trinity Woods
- ☐ Green Hill Park
- ☐ Grant Square Park
- ☐ Rural Cemetary
- ☐ Institute Park
- ☐ Salisbury Park
- ☐ Newton Hill at Elm Park
- ☐ Beaver Brook Park
- ☐ Hadwen Arboretum
- ☐ Knights of Columbus Park
- ☐ Columbus Park
- ☐ Coes Park
- ☐ John J. Binienda Memorial Beach
- ☐ Tetasset Ridge
- ☐ John W. Spillane Field
- ☐ Boynton Park
- ☐ Cascades West
- ☐ Cascades Park
- ☐ Cascading Water

What did you like about the kiosk?

Your answer

What did you dislike about the kiosk?

Your answer

Do you have any suggestion to improve upon the kiosk in any way?

Your answer

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Section 7: Kiosk Content

East-West Trail Informational Kiosks

Kiosk Content

Each kiosk we are creating will consist of a trail map and historical information for the area surrounding the kiosk.

For each of the following types of information, please indicate your interest on a scale from 1-5, 1 being no interest, 5 being very interested.

Park History
The history of how the park was created and notable events throughout the park's lifetime.

	1	2	3	4	5	
No Interest	○	○	○	○	○	Very Interested

City History
How the park/area played a significant role in historical events within the city of Worcester.

	1	2	3	4	5	
No Interest	○	○	○	○	○	Very Interested

State History
How the park/area played a significant role in historical events within Massachusetts.

	1	2	3	4	5	
No Interest	○	○	○	○	○	Very Interested

National History

How the park/area played a significant role in national historical events.

	1	2	3	4	5	
No Interest	○	○	○	○	○	Very Interested

Architectural History

The history of structures and buildings in and around the park.

	1	2	3	4	5	
No Interest	○	○	○	○	○	Very Interested

Natural History

Plants, animals, and geology throughout time.

	1	2	3	4	5	
No Interest	○	○	○	○	○	Very Interested

Please list any other types of historical information which interest you

Your answer

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Section 8: Miscellaneous

East-West Trail Informational Kiosks

Miscellaneous

Do you have any questions, comments, or concerns?

Your answer

Would you like to receive a copy of your survey results at the conclusion of our study?
Your results will be sent to you via email at the conclusion of our study.

○ Yes

○ No

Would you like to receive a copy of our report at the conclusion of our study?
Our report will be sent to you via email at the conclusion of our study.

○ Yes

○ No

If you answered "Yes" to either of the two previous questions, or would like a response to any question, comment, or concern, please indicate the best email for us to reach you.

Your answer

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Appendix B: Kiosk Designs

Due to the size of each kiosk and resolution limitations on computers, we have provided a link to view the PDF version of each kiosk online.

Institute Park (One Panel)

PDF Version: https://bit.ly/2WJBeHG

Logan Field (Two Panels)

PDF Version: https://bit.ly/3b2cyPP
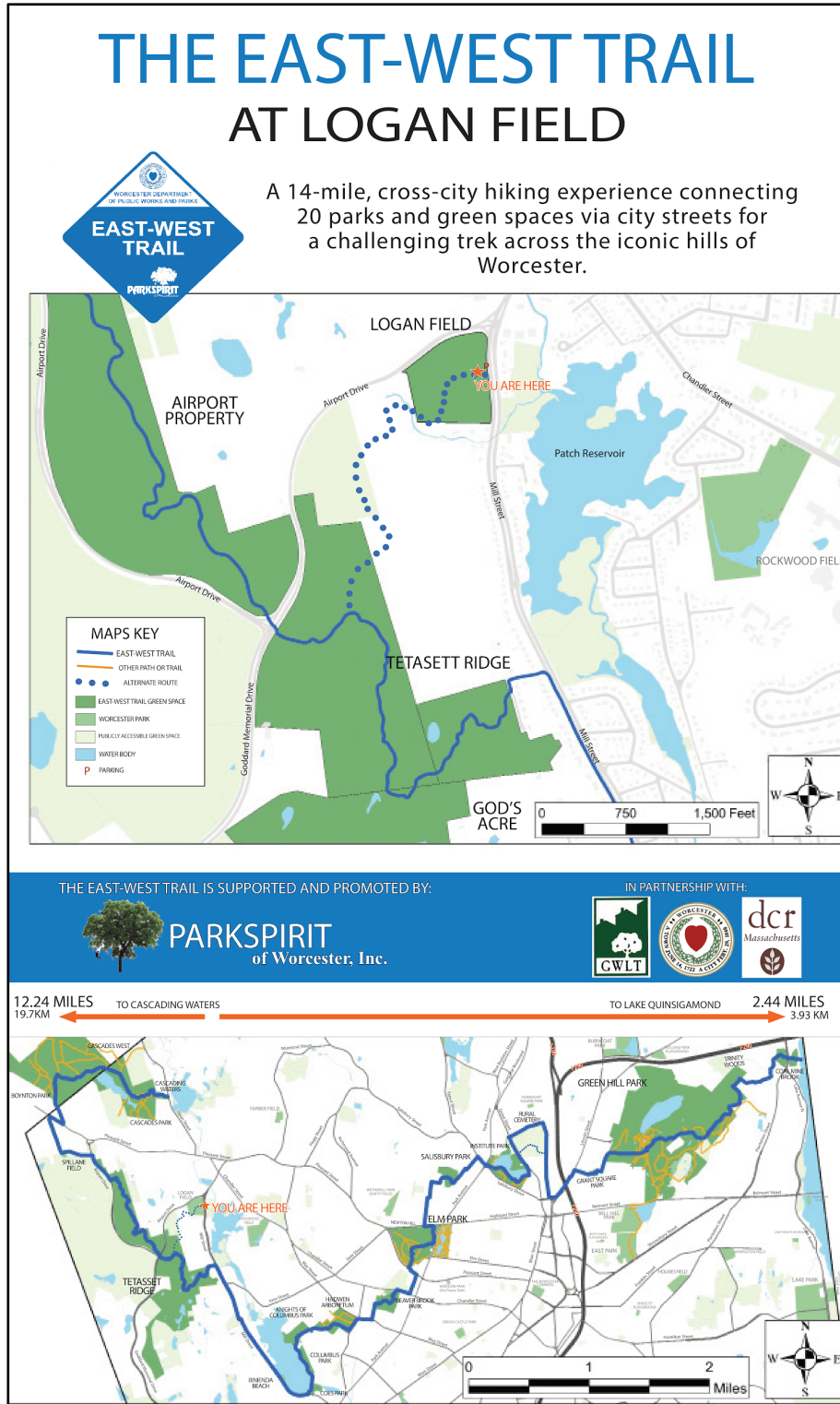
THE EAST-WEST TRAIL
AT LOGAN FIELD

A Worcester city park since 1927
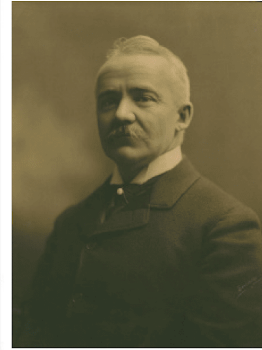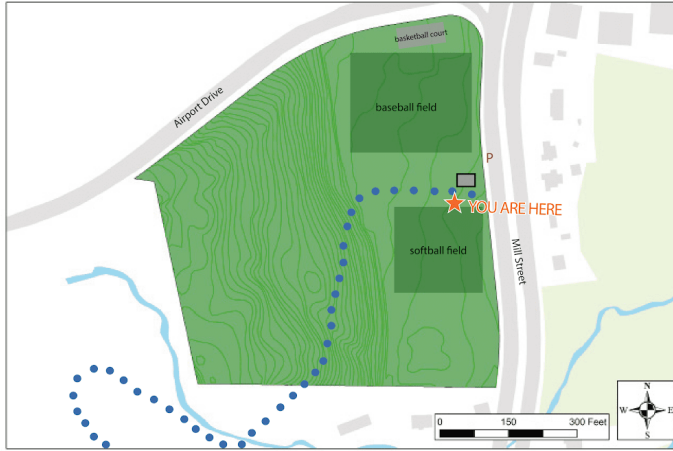
James Logan
1852 - 1929

Logan Field was purchased in 1928, from the trustees of the Speedway Glens. It was named after James Logan who served as Mayor of the City for four years and was a pioneer in the playground movement. On May 15th, 1911, he created a Playground Commision. When the Playground and Park Commision were eventually consolidated in May, 1917, James Logan was elected to the Board and served throughout the remainder of his life, regularly attending Commision's meetings until his health prevented him from doing so.

"I believe that there is no investment which can be made by the city which will do more for the physical upbuilding of the children than playgrounds."

James Logan was the 35th mayor of Worcester serving from 1908 to 1911. Born in Glasgow, Scotland on May 6, 1852, he moved with his family to the United States when he was three months old. Logan worked in the Parkhurst Woolen Mill at Valley Falls as a child. He attended B.G. Howe's Business College and worked as a billing clerk while in school. In 1878 he accepted a position in the G. Henry Whitcomb & Company envelope factory and became very familiar with the business. Eventually, Logan left his employer and helped organized a new envelope company where he became vice president and general manager. During this time, James Logan was also involved in the council of the Republican committee. He accepted the nomination for mayor and won by a large margin in 1908. He was known for his sense of humor and public speaking skills. He was also president of the Worcester County Mechanic's Association and the YMCA.

James Logan served as mayor from 1908 to 1911

In 1927, two runways and two hangars opened for business at the Worceter Airport

Worcester Regional Airport

In 1927, the first Worcester airport was opened on a hill in North Grafton. This small field served as Worcester's airport for 19 years. Eventually, in 1944, consruction began for a new airport closer to downtown. Two years later, commercial service started at what is now the Worcester Regional Airport. The airport has had its ups and downs, reaching its peak in the late 1980s. In 2010, Massport, which operate Boston's Logan Airport, acquired Worcester Regional Airport.

Marshall Silverman

Dedicating around 32 years of his life to youth baseball, he made sure that anyone who signed up felt at home. Besides coaching, managing, and serving as President during his time in the league, he also rounded up sponsors, uniforms, equipment and more to ensure that those who came through the league had a memorable experience. One of his colleagues, Tim Murray, the former Lieutenant Governor of Massachusetts, recalled him as an "unsung, yet very important hero - the league wouldn't have survived if it wasn't for him."

Marshall I. Silverman with his wife, Eileen, near a sign for Logan Field and the Marshall Silverman Baseball Diamond

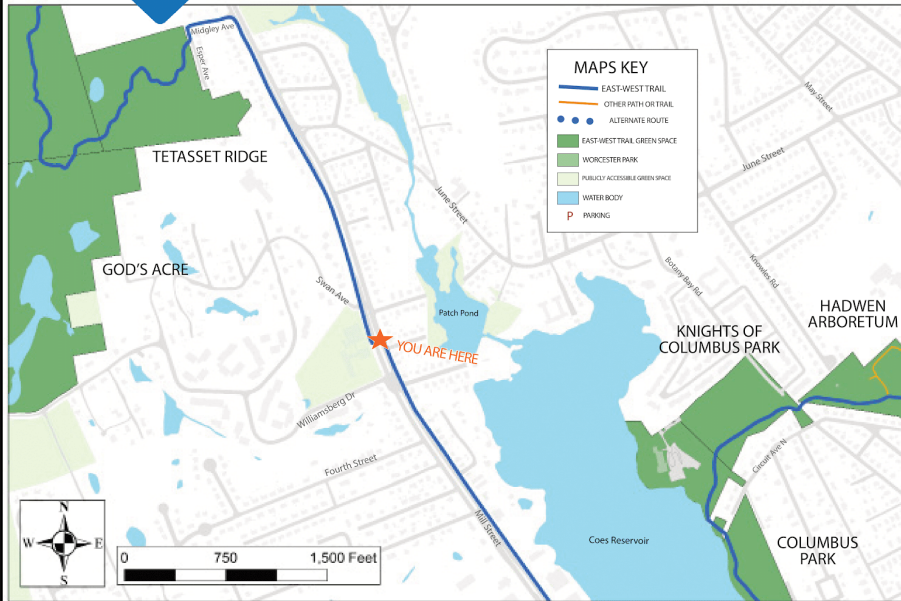Visit PARKSPIRIT.ORG for interactive maps and more information.

Mill St. (Two Panels)

PDF Version: https://bit.ly/3dHp7ly

THE EAST-WEST TRAIL
AT MILL STREET

God's Acre

God's Acre is located on Rattlesnake hill, between Mill Street and Goddard Memorial Drive. In the 1840s, Solomon Parsons bought a 10 acre plot of land in the Worcester hills. Parsons was a Millerite, a member of a group of people who believed the rapture predicted in the Bible would occur in 1844. He paid a local stone carver to inscribe a rock deeding the land to God. This monument is still present today. Parsons owned the property for nearly half a century before passing the land on. Currently, the Greater Worcester Land Trust is in possession of God's Acre.

Tetasset Ridge

The Tetasset Trails are among the 56 conservation areas under the watch of Greater Worcester Land Trust that are open to the public. Spanning 115 acres, the collective trail system is the very first property preserved by the land trust and is slightly adjacent to the Muir Meadow. The signs and its posts present in this area were added in by Woonakochu, the chief of the Tetasett Tribe.

The woods boast a variety of wildlife sights, ranging from pools and streams to the white-tailed deers and wild turkeys who make this area their home. Several uncommon flora grow among this area as well such as the Maidenhair Ferns, White Baneberry, and Bloodroot.

Deed rock (pictured above) has been on Rattlensnake hill since the 1840s. Below is a transcription of the momument.

"Know all men by these presents that I William G. Hall Of Worcester in the County of Worcester and Commonwealth of Mass in consideration of 125 dollars paid by the hand of Solomon Parsons of the same Worcester the receipt where of I do hereby acknowledge do hereby give, grant, sell and convey unto God through the Laws of Jesus Christ which are made known to man by the record of the New Testament recorded by Matthew Mark Luke John the Evangelist this land to Governed by the above mentioned Laws and together with the spirit of God the said tract of Land is situated in Worcester above mentioned the South Westerly part bounded as follows viz beginning at the southwest corner Of the lot at a stake and stones by land of E Daniels Thence easterly by land of S Perry about 97 ½ rods to a Corner of the fence thence northerly by land of L Cates About 54 rods to a corner of the fence thence westerly By land of the heirs of J Fowler about 24 rods to A chestnut tree in the wall at the corner of the Land of said Daniels and a heap of stones by the Side of it thence southerly to the bound first mentioned."

John J. Binienda Memorial Beach

In its proximity lies the John J. Binienda Memorial Beach, a small park of just under two acres located to the east of Mill Street. Originally an acre and half larger, it was only in 1962 that a portion of the park was taken away for the reallocation of Mill Street.

Formerly known as Coes Pond Beach, It was renamed in the summer of 2017 to honor the late State Rep. John J. Binienda. Before he was a state representative for the 17th Worcester District, Binienda taught public school in Leicester for 18 years. He was also the Dean of the Worcester Delegation, in which as the chairman of the House Committee of Rules, he oversaw the movement of hundreds of bills over the course of the biennial legislative session.

During his lifetime, he received several awards, one of which includes the Robert F. Kennedy Lifetime Achievement Award granted to him for his 28 years of service to the Massachusetts House of Representatives. Binienda also received an honorary doctorate in Public Administration from his alma mater Worcester State University.
He attended Quinsigamond Community College before attending Worcester State.

On the left is John J. Binienda Memorial Beach. State representive John J. Binienda is pictured on the right.

Visit PARKSPIRIT.ORG for interactive maps and more information.