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Creating a Successful Wayfinding System: Lessons Learned from Springfield, Massachusetts

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**CREATING A SUCCESSFUL WAYFINDING SYSTEM:
LESSONS LEARNED FROM SPRINGFIELD, MASSACHUSETTS**

A Master's Project Presented

by

YANHUA LU

Submitted to the Department of Landscape Architecture and Regional Planning of the
University of Massachusetts Amherst in partial fulfillment
of the requirements for the degree of

MASTER OF LANDSCAPE ARCHITECTURE

November 2016

Landscape Architecture

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DEDICATION

To my mother.

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I would like to thank my chair of committee, professor Michael DiPasquale. He supported me on the topic I am interested in, and kept me in the right track even when he was sick. Besides that, he hired me as a research assistant for him and UMass Design Center. I found out my strong points and my interests by working with him. I really appreciate the time working with him, the opportunities he provided me, and everything he taught me. Thanks for being so nice to me.

I want to thank my committee member, Ethan Carr. He helped shaping my ideas of this project, and gave me suggestions academically. In the last two years, as my advisor, he gave my advices when I was confused, and cared about me as an international student.

A special thank you to my fellow classmates in the 2016 Masters of Landscape Architecture at the University of Massachusetts Amherst. From them, I learned how to be professional, patient, and kind.

ABSTRACT

Creating a Successful Wayfinding System:
Lessons learned from Springfield, Massachusetts

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The masters project presents findings from recent work the author completed related to wayfinding, and wayfinding systems. This work began as part of a graduate urban design studio, followed by work as a research assistant at the UMass Design Center in Springfield, on a new “demonstration” wayfinding system installed in Springfield, Massachusetts. The wayfinding project was done in association with the Pioneer Valley Planning Commission and the Springfield Office of Planning and Community Development, was implemented with the main goals of improving public health by encouraging more people to walk.

Wayfinding systems are increasingly seen as an important part of a successful built environment. For many cities, good wayfinding systems can make the environment easier to understand and navigate, making for a better, more enjoyable experience. And an enjoyable experience may encourage people to return again, further enhancing civic life.

The overall aim of this project is to use the experience gained as part of an actual project in Springfield to make recommendations and provide guidance to other cities and towns considering new wayfinding systems.

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CHAPTER 1

PROJECT OVERVIEW

The master's project presents findings from recent work the author completed related to wayfinding, and wayfinding systems. This work began as part of a graduate urban design studio, followed by work as a research assistant at the UMass Design Center, on a new "demonstration" wayfinding system for Springfield, Massachusetts.

Wayfinding systems are increasingly seen as an important part of a successful built environment. In general, successful wayfinding systems can help make the environment easier to understand and navigate, making for a better, more enjoyable experience for users. And an enjoyable experience may encourage people to return again, further enhancing civic life.¹ Beginning in the spring of 2016 the City of Springfield lead a demonstration pedestrian wayfinding system in the city's downtown Metro Center neighborhood. The project, a collaboration between the City of Springfield, the Pioneer Valley Planning Commission (PVPC), Walk Boston, MassDevelopment, Springfield Business Improvement District (Springfield BID), and UMass Design Center, was implemented with the main goal of improving public health by encouraging more people to walk.

This goal would be accomplished by meeting the following main objectives:

Create a wayfinding system that helps demonstrate that popular destinations are within "walking distance";

Install a wayfinding system in Metro Center that is clear and easy to use in order to benefit residents, tourists, and visitors, in turn making it easier for them to navigate and locate downtown destinations;

Install a well designed and comprehensible wayfinding system that is attractive and useful.

Master's Project Goals and Objectives

In general the research project seeks to present useful information about the design and implementation of a successful downtown wayfinding system. The overall aim of this project is to use the experience gained as part of an actual project in Springfield to make recommendations and provide guidance to other cities and towns considering new wayfinding systems.

Goal 1: Present an overview of the history and importance of "wayfinding".

Objectives include:

Describe history and development of wayfinding.

Describe the different types of wayfinding systems, how they benefit the urban landscape especially, and in what occasions are they used.

Show benefits and drawbacks of wayfinding systems.

Goal 2: Present case studies, highlighting Springfield to show "lessons learned".

Objectives include:

Research and present relevant case studies for Springfield and nine other cities.

Compare, contrast and present "lessons learned".

Categorize/identify different types of wayfinding systems.

Goal 3: Develop a set of standards and guidelines (Toolbox) to assist cities and towns interested in implementing wayfinding systems.

Objectives include:

Summarize research data and determine most useful information to present.

Determine table of contents and chapters.

Create graphic/written format to present information.

Create bibliography/references for readers to find additional information.

Create quick "checklist" of cities and towns to use before starting a wayfinding system.

Determine graphic and presentation style.

Determine ways to distribute guidelines/findings.

What is Wayfinding?

"Wayfinding is the process of determining and following a path or route between an origin and a destination."²

Wayfinding is knowing where you are in space, knowing where you are going, and knowing how to get there from your current location.³ It refers to people's experience of orientation and facilitates the selection of a particular route to traverse the urban environment, helping people successfully get to their destination. Wayfinding not only directs people to destinations, but also educate them on boundaries, and the key features of the urban environment as a teaching tool.⁴ By doing this, the city or environment becomes more legible. Wayfinding and associated identification elements help support the way we understand and experience the city.¹

Wayfinding Types

Wayfinding is a holistic concept that focuses on making the environment easier to read and understand. Wayfinding in the conventional sense includes elements such as physical signage, electronic signage, use of landmarks as navigational aids, and certain types of tactile features that employ the sense of touch.⁵ In this project, we will discuss different types of physical signage, used most commonly for wayfinding.

Different types of wayfinding signage can present different kinds of information. Certain types of signage are useful for some situations more than others.

Ernest Dwight describes four types of signs:

1. Identification,
2. Directional,
3. Informational,
4. Regulatory.⁶

The four types of signs convey different types of information. It is important to know the characteristics of the different systems in order to choose the most appropriate type for the situation.

Identification signs.

Identification signs typically use words or icons that label the location or function of a destination or place. For example, the entrance signs in national parks use a tent icon signifying that the location is a campsite. (Figure 1)



Figure 1: Identification Sign

Entrance to Jones Canyon Campground.

Photo: http://www.freeguidetonwcamping.com/images/Jones_Canyon_Sign.jpg

Identification signs serve best when they are easy to read and understand. They do not point the direction or distance.

Directional signs.

Directional signs do not appear at specific locations, but at nearby places and on the way to these locations. They should appear at junctions, where a decision must be made, or where people may be confused about the best way to get to a desired location.

Directional signs help collect and organize large numbers of people into a singular group. For example, directional signs in airports keep people moving where they should not stand still. (Figure 2) People follow the directional signs until they find subsequent identification signs.



Figure 2: Directional Sign

Arrival at Logan International Airport in Boston.

Photo: <https://elementsunearthed.files.wordpress.com/2014/12/welcome-to-boston.jpg>

Informational signs.

Important and timely information about locations and surroundings can be provided by informational signs. (Figure 3) Meanwhile, informational signs can provide other information along the route. For instance, if a path is temporarily closed, users can be notified ahead of time. If an area is under construction, an informational sign can serve to inform people that the path could be dangerous.



Figure 3: Informational Sign

UMass Amherst Campus Map outside W.E.B. Du Bois Library.

Photo: Yanhua Lu

Regulatory signs.

Regulatory signs tell people the regulations or requirements for the area. The signs tell people what is allowed and what is not allowed. Regulatory signs include familiar signs such as no-parking signs, non-smoking signs, and speed limit signs. (Figure 4) Regulatory signs need to be very clear and easy to see, since disregarding or misunderstanding the rules or regulations could result in a violation of the law or regulation, leading to a fine, or worse.⁶



Figure 4: Regulatory Sign
Speed Limit Sign.

Photo: <http://www.mvtimes.com/mvt/uploads/2014/07/old-speed-limit-sign-45.jpg>

Overview of the Development of Wayfinding

Humans have always had the need to know where they are, and where they are going. The existence of signs and markers dates to the beginning of time, evidenced by the simple piling up of rocks on a trail, or cave and rock paintings that helped guide and send messages to a passersby. The picture below (Figure 5) shows an 800-year-old oak tree bent as a sapling and tied to the ground to mark directions and the location of important destinations by American Indians in Georgia.⁷



Figure 5: An 800-year-old Bent Oak Tree in Georgia

Photo: <https://web.extension.illinois.edu/illinoissteward/issues/backissues/2006/Summer/page2.jpg>

The need for wayfinding and approaches to address this need have not changed a great deal over the years, even as wayfinding systems have become more sophisticated. Finding safe shelter, or a productive fishing hole, was necessary long before our current generation needed the kinds of wayfinding systems that have become commonplace today. Most of the changes have been due to the availability of new technology and materials.⁸

Over time, as humans developed and became less transient, they started to build settlements, and then villages. As these communities got larger, the necessity to provide ways to

navigate also grew. Each settlement developed its own particular ways of guiding residents and warning them of enemies and threats.

As more people become literate, signs written in a verbal language became more common. Eventually as cities and towns grew into larger cities and metropolitan areas, the need for good directional guidance became more important. And over time, the signs needed to be visually successful and attractive. Therefore, architects and city planners began to call upon artists and designers to help create signs that were pleasing to look at.

The early 20th century Bauhaus design movement in Germany was influential in the design of modern wayfinding systems. In addition, architectural design, typography, color, graphics and painting were integrated into the Bauhaus curriculum.

In the 1980's, major changes took place with the development of Environmental Graphic Design (EGD).¹⁰ This special field accomplished two things. One is that it allowed the practice of environmental graphics to be more refined and sophisticated beyond what had been the ability of most architects' and designers'.¹¹ The other was an increased separation of the professions into different and distinct schools specialized design.¹² The new EGD classes in most conditions were not part of an architectural education, separated from planning and architecture design.¹³

Many designers, researchers, and planners recognize the work of Kevin Lynch and his book "The Image of the City" as the beginning professional thinking about the ways humans understand the environment.¹⁴ Lynch created the term "wayfinding" which we use today as well as the "language" to describes the physical environment. Lynch believed that all urban space could be described in terms of paths, edges, nodes, landmarks, and districts.¹⁵ Thanks to this "spatial language", all researchers can now communicate and discuss what they see or what they study. It has become a common vocabulary among modern planners, architects, graphic designers, web designers, and clients.¹⁶

Notes

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CHAPTER 2

LITERATURE REVIEW

Overview of Wayfinding

"Wayfinding is the process of determining and following a path or route between an origin and a destination."¹ Wayfinding refers to an information system that guides people within the physical environment to improve their understanding and experience of the space.

There is a large body of literature related to the subject of wayfinding. The literature dates back to 1960, when the word was first used by the prominent urban planner, Kevin Lynch. Other important work was done in 1992 by Romedi Passini and Paul Arthur who argued that wayfinding includes more than the creation of static “mental map” of space, as Lynch suggested, but also a spatial problem-solving exercise as people move across architectures and urban spaces.

The subject of wayfinding, originally studied by cognitive and environmental psychologists, has become more relevant to cities and towns and the field of urban design and planning in the last twenty years.² Today, most cities and towns, large and small include wayfinding systems as an important part of the built environment.

Wayfinding is particularly important in complex built environments. These include downtowns but may also include large buildings or campuses such as hospitals, universities, and transportation facilities. Over time, as architectural environments have become more complex, more and better visual cues are needed. These cues can come from maps or directional signs and symbols that help direct users to specific destinations. In modern environments, effective wayfinding systems can contribute to a sense of safety, well-being, and security.³

Some early wayfinding systems were designed for especially complex environments such as hospitals and airports. Hospitals present many unique navigational challenges. In many hospitals, the physical layout has evolved over many years to often include multiple buildings, making them

particularly complex to navigate. In addition, many patients and their families must find their way in a hospital setting under stressful situations.

In some complex settings, designers rely less on text-based systems and instead favor systems that rely more heavily on non-text cues such as colors and graphics. In transportation settings, such as airports and railway stations, where travelers must be directed to intermodal connections, wayfinding systems provide critical guidance along carefully-planned paths designed for large numbers of travelers.⁴

In recent years wayfinding design has evolved to become standard practice within the planning departments of cities and towns. Increasingly wayfinding systems are seen as an important component of today's emphasis on "placemaking". The latest wayfinding systems often incorporate new technologies such as mobile applications, digital displays, Radio-frequency identification(RFID), and other wireless systems. New systems may also include a variety of high-tech materials and graphics that combine symbols, maps, signage, different colors and other communication facilities.

History of Wayfinding Design

There are many examples of early wayfinding design systems. Many of these were created to identify and provide important information about landmarks or destinations, with symbols such as carved letterforms, pictographs, and imagery. These "signs" were produced by artisans to communicate civic information or religious meaning. Ancient Egyptians used hieroglyphics (3400 B.C. – 396 A.D.) to call attention to the accomplishments of royalty and their dynasties.⁵ (Figure 6)

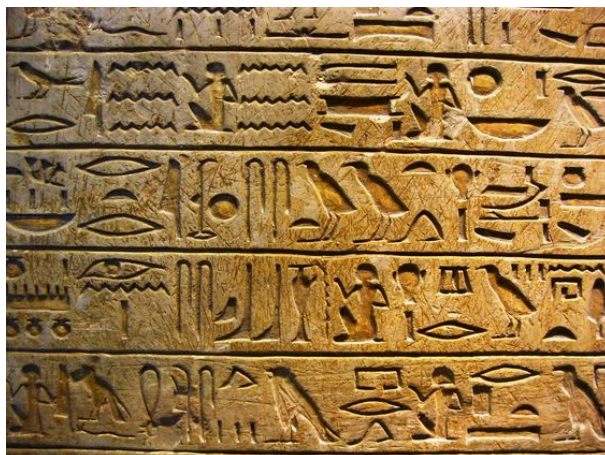


Figure 6: Egyptian Hieroglyphics

Photo: <https://s-media-cache-ak0.pinimg.com/564x/60/b0/50/60b0507b722e7a90fb09181a2009e6d.jpg>

During the classical period (27 B.C. - 6th Century A.D.), Romans created the Roman inscriptions, which are bold, strong, and clear. These inscriptions, thought to be the forerunner of the early alphabet are still visible on public buildings and monuments. ⁵ (Figure 7)

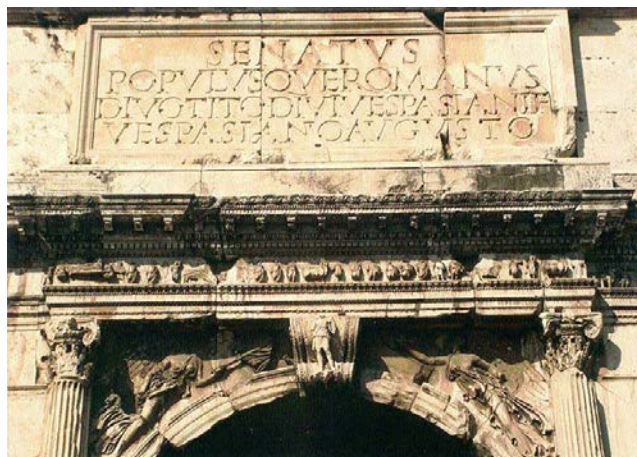


Figure 7: Roman Inscriptions on Arch of Titus

Photo: <http://catholic-resources.org/AncientRome/rom4-8.jpg>

In Europe during the Middle Ages (12th Century - 16th Century), letters on tombs in Gothic cathedrals were designed to complement the architectural detail of the window, and mirrors the curvilinear calligraphy monks used to for sacred writings.

By the 19th century, with the rise of industrialization, commercial and civic signs began to be visible in the public landscape.⁵ (Figure 8)

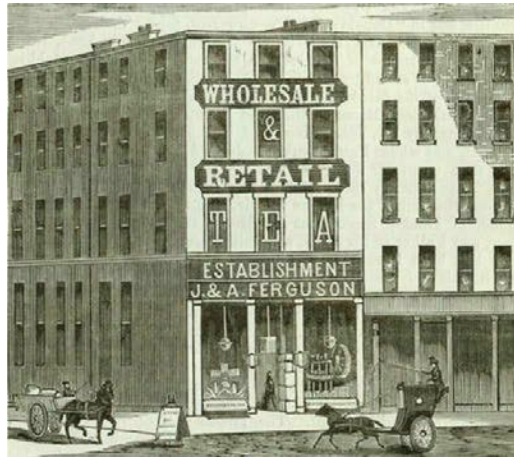


Figure 8: J & A Ferguson Tea Merchant Glasgow, 1827

Photo: <http://chinese-export-silver.com.gridhosted.co.uk/wp-content/uploads/2014/03/J-A-Ferguson-Tea-Merchant-Glasgow-19th-Century.png>

In the mid-nineteenth century, signs on the facades of commercial buildings became an important part of the urban streetscape in New York and other American cities. These signs were rarely uniform, consisting of different shapes and typefaces. The designs were often based on the particular taste of sign makers and building owners. Size was usually only limited by the amount of available space. While these signs may appear as interesting historic artifacts for today's audience, many people at the time considered them to be eyesores. For some detractors, the signs stood for rampant commercialism.⁵ (Figure 9)



Figure 9: The Harper Establishment, New York, 1865

Photo: <http://visualizingnyc.org/wp-content/uploads/2014/08/NY-0291.jpg>

During the first half of the twentieth century, when large numbers of tall buildings and early skyscrapers were built, signs were often integrated into building facades. Signs were either installed directly onto the facade, or incorporated into metalwork or other decorating details on building exteriors. Some signs complemented the architecture style of the buildings, but others did not. Large and elaborate signs often created a look that was both extraordinary and powerful.⁵

(Figure 10)



Figure 10: The corner of Sixth Avenue and 40th Street in Manhattan, 1940

Photo: http://i.dailymail.co.uk/i/pix/2012/04/24/article-2134408-12BD18E7000005DC-0_964x751.jpg

By the late twentieth century, as cities and towns sprawled and became unwieldy, the demand and need for wayfinding grew. The development of wayfinding during this period can be divided into three main eras.

The first era (1960 - 1970s) shows the inception and conceptualization of wayfinding. Researchers explored the ways information was processed, and how people naturally find their way by using cognitive mapping and spatial orientation.

The term "wayfinding" was first used by Kevin Lynch in his book "The Image of the City" published in 1960. Lynch reasoned that people study their surroundings by forming, storing, and refining cognitive maps in a structured form, which is usually framed by the five key features: paths,

edges, districts, nodes, and landmarks.⁶ Cognitive maps are defined as mental representations or overall spatial image and layout of settings.⁷ Spatial orientation is defined as the natural ability to formulate an adequate cognitive map of a setting in relation to the surroundings.⁸ Humans tend to use cognitively stored and recalled information much more than supplementary aids, even though there are plenty kinds of supplementary tools out there.⁵ This is because most of the trips are made in familiar or partly familiar environments when experience plays a more important role than supplementary tools like maps.⁹ Thus, a clear understanding of how cognitive processes influence people's ability to find their way was emphasized.

The second era (late 1970s - 1990s) sees the further development of the concept of spatial orientation. In the late 1970s, Romedi Passini, an architect and environmental psychologist, argued that wayfinding includes more than the creation of the kind of static mental map that Lynch suggested (1960). Passini introduced the idea of wayfinding as a spatial problem-solving exercise where people must solve a series of challenges as they move across architectural and urban spaces.¹⁰ He found out that humans make their decisions, execute them, and process information depending on information and cues within these environmental spaces. In 1992, Passini collaborated with Paul Arthur to extend his earlier work. The new work introduced the term of environmental communication, which argues that the built environment should communicate with the users.¹¹ According to Hunter, the work of Arthur and Passini was the first to identify wayfinding information in architectural form. Their work compiled this evidence, and converted the results into design guidelines.¹²

The third era (mid 1990s - today) saw existing concepts expanded. Current researchers are focusing on how people acquire knowledge. Less emphasis is put on actual variations in the environment. Recent trends show a new integration of environmental psychology, space cognition, and space syntax research. These findings are fostering a new phase of experimental wayfinding design.⁵ Even so, wayfinding continues to be underpinned by spatial orientation, cognitive

mapping and spatial problem solving to a large extent. Perhaps more than anything else, the current era's extraordinary interest in wayfinding especially as it relates to design and technology, indicates that the field has a range of needs and challenges that provide many opportunities for further study.

The Benefits of Good Wayfinding Systems

There are a variety of costs associated with having poor wayfinding systems. Zimring,¹³ Arthur and Passini,¹⁰ Carpman and Grant¹⁴ and Huelat,¹⁵ say that stress related problems such as raised blood pressure and headaches, are linked to deficient wayfinding systems in complex environments. The additional costs can be fairly serious. These include lost staff time and disruption due to the need to provide directions, lost business and user dissatisfaction, the need for additional security staff and traffic management, danger to users wandering into limited access areas of buildings, and injury and death during emergency.

Zimring's study found that the hidden cost of needing to give directions to people because of the poor wayfinding in a building complex was about \$220,000 a year, which equaled the cost to hire two full-time professionals.¹³ Zimring noted that, the need to have guidance and directions provided by staff and other occupants was something that should be limited, by developing an efficient and comprehensive wayfinding system.¹³

People often feel inadequate for lacking the acumen¹¹ to navigate complex buildings.¹⁶ However, a lot of people who have studied wayfinding assert that getting lost is often due to a poorly designed environment or wayfinding system.

Other researchers show that women¹⁸ have less spatial confidence than men,¹⁹ and they rely more on localized landmarks for wayfinding.²⁰ Men on the other hand tend to find their way or give directions by using globalized configuration strategies.²¹ Lawson asserts that space belonging to us should communicate with us by its physical properties. He argues that this "human language

of space" should be the basic tool of the trade for an architect.²² A similar point was made by Lynch, who emphasized that design should be used to reinforce existing social meanings, rather than deny them. From their research, we can see wayfinding coordinate with well-designed environment that based on "human language of space" would be efficient and effective.

Notes

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CHAPTER 3

METHODOLOGY

Literature Review

The literature review focuses mainly on two topics: the development of wayfinding systems and the benefits that wayfinding provides.

Human beings are born with the need to understand their environment. Some form of wayfinding has existed from the beginning of time.¹ Still most wayfinding designs have been developed recently, beginning in the nineteenth century. The 1800's saw the beginning of an era of new industrial development highlighted by the growth of major cities. And as the urban environment becomes more complex, the need for better wayfinding systems increased. This is true in the United States, but also in every part of the world.

Case Studies

The case studies approach, presenting and comparing a range of exemplary projects has shown to be a highly appropriate and valuable research method. This method not only provides practical information on potential solutions to a problem, but the case study examples provide effective teaching opportunities.²

The case studies used for this project explore ten wayfinding designs in a range of cities including Springfield, Massachusetts. A variety of data has been collected including signage types, population, density, cost, quantity of signs, etc. By comparing the data collected and the different approaches and solutions implemented in each city, the most successful strategies will be identified. The project benefits from "lessons" learned as part of a recently completed project in Springfield. These lessons, and the lessons learned from the other case studies are used to help create guidelines for general wayfinding design.

Interview

A questionnaire designed in collaboration with the UMass Design Center in Springfield was created to establish baseline data about wayfinding in Springfield. The questions provided on the questionnaire were created to establish general information about how people feel about wayfinding in downtown Springfield. The questionnaire also addresses how people reacted to the new wayfinding system.

The interview technique included a pre-interview analysis and interview guidelines.

The pre-interview includes understanding the current situation in downtown Springfield and helped inform the interview locations. In order to collect adequate data and information, the followings had been done: visiting downtown Springfield in different times, on-line research, meetings with clients such as planners of the Office of Planning and Economic Development in the city of Springfield, and collecting GIS data and overlay maps.

After defining interview locations, UMass Design Center interviewed pedestrians in each of the location and analyzed the strengths and weaknesses³ of downtown environment, if it helps people find their ways or make it harder, and how residents and visitors feel about the city and their expectations.

Notes

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CHAPTER 4

DETAILED CASE STUDIES

Although we live in a world where cities can be navigated by smartphones and other technologies, and any information on a destination can be found within minutes, physical wayfinding elements are still necessary.

Municipal wayfinding systems serve more than basic navigation, identification, and information. Wayfinding elements, such as monuments, directional systems, interpretive and even regulatory signs, can enhance and enrich our experience with urban environments. Wayfinding is the organization and communication of our dynamic relationship to space and environment. Successful environmental design to promote wayfinding allows people to determine their location within settings; determine their position relative to their destination; and develop a plan that will take them from their current location to their destination. A good wayfinding design should accomplish the following main goal: identifying and marking of specific spaces; grouping of spaces; and linking and organizing spaces using both architectural and graphic means.

The foundation of a successful urban wayfinding plan is having a direct and conscious connection to the existing logic of a city or place. The “logic of the city” is the organization of parts of the city into a coherent pattern that can be recognized by the user, as part of a "mental map" to help navigate from place to place. A successful wayfinding plan can transfer a cityscape from a chaotic mix of elements to an understandable language that is logically understood by users.

Effective wayfinding signage can not only highlight specific destinations, but they can also help brand the city, providing a shared image among residents that helps support the entire community.

Studying "successful" wayfinding examples provides large quantities of useful data that can help inform the design of successful wayfinding systems planned for Springfield and other cities. The case studies listed below were selected because they represent deemed "successful"

wayfinding approaches. Each of them has been praised as achieving the goals set by their cities, and have been well-received by local residents and visitors.

Charlotte, North Carolina

Charlotte is the largest city in the state of North Carolina, and the second largest city in southeastern America. The area of the city is 297.7 square miles (771 km²). The population of the city is 809,958, and the density is 2,720.7/sq mi.

Wayfinding system in Uptown Charlotte may be one of the most highly integrated urban wayfinding systems in the world.

The target area, Uptown Charlotte is relatively small, including 168 blocks over an area of 1.7 by 1.1 miles within the I-77/277 loop around the city. Most of the major attractions are in center Uptown, within a half-mile of the city square. (Figure 11)

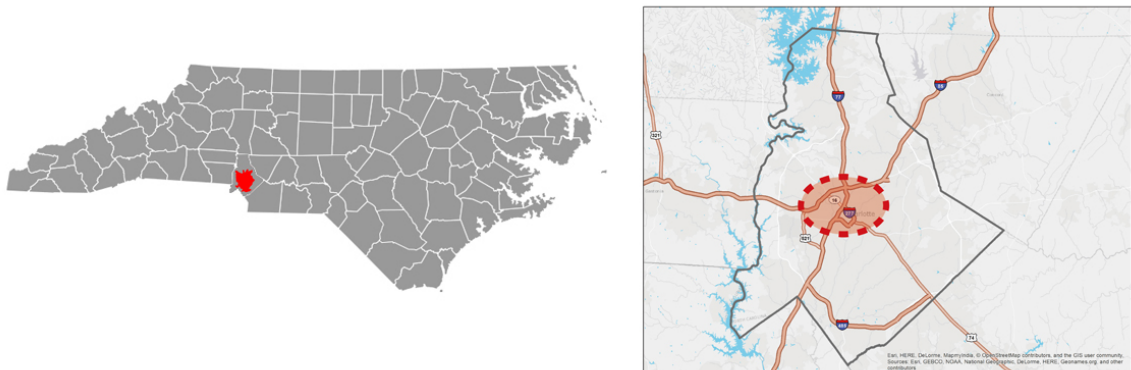


Figure 11: Charlotte, North Carolina and Target Area of the Wayfinding Program

Development Background

The 2010 Center City Vision Plan indicates that downtown employee will double in a few decades to 100,000. The city opened a new light rail system in 2007, while the new cultural arts campus would bring four new attractions and tourists coming for them. According to the tendency, a comprehensive wayfinding system was recommended to guide motorists, pedestrians, and light

rail passengers to their destinations in Uptown, the center-city core of Charlotte. The wayfinding system finds the hidden logic in the organization of the city, and reduces complex geography into a simple diagrammatic idea.

Signage Information and Design Elements

Wayfinding system in Charlotte includes both pedestrian and vehicular signage.

The first phase of the pedestrian signage program included 13 on-street signs and 14 map kiosks at light rail stations. The second phase added 30 more signs on street throughout uptown. The final phase added 6 more signs in Spring 2010, when two arts museums, a new African-American Cultural Center, the NASCAR Hall of Fame, and other new venues opened.

Vehicular system includes 45 freeway signs, at least 38 on-street signs, 10 parking guidance signs, and at least 1 dynamic sign that will broadcast parking availability.

Pedestrian on-street sign (Figure 12) is packaged with these parts: golden crown on top of pole indicates "Queen City", color-coded head panels indicate districts, while dark green panels show directional information, and bottom panels show transportation information. Below the sign panels, eye-level maps give pedestrians an overview of the Uptown area and attractions within its four districts in different colors.



Figure 12: Pedestrian On-Street Sign

Photo: https://segd.org/sites/default/files/styles/galleryformatter_slide/public/Charlotte_01.jpg?itok=ghr_bJJu

Map kiosk at light rail station (Figure 13) shows the four-district map with attractions information.



Figure 13: Map Kiosk at Light Rail Station

Photo: https://segd.org/sites/default/files/styles/galleryformatter_slide/public/Charlotte_09.jpg?itok=C6ZR7DhH

Vehicular signage (Figure 14) was the second phase of the project, including gateway, parking, and directional signs.



Figure 14: Vehicular Signage

Photo: http://www.twotwelve.com/picture/g_charlotte1.jpg?pictureid=17425444

Feedback and Recommendations

It has been noticed that visitors and commuters using the pedestrian signs. The city has also gotten good feedback from the business community.

The wayfinding system has been considered as the most comprehensive urban wayfinding program in United States and has been cited as a model for wayfinding industry standards and reference for a lot of cities and towns that developing their wayfinding systems.

Reasons to be Selected

1. Similar geographic position and area.

Charlotte is located in south of North Carolina, while Springfield is located in southwest Massachusetts. I-77/277 and I-85 across the city of Charlotte, and I-91 across downtown Springfield. These two cities are both gateway cities. Uptown Charlotte, the focus area of the

program, is about 1.87 square miles. Metro Center/downtown Springfield, which would be the target area, is about 0.92 square miles.

2. Similar developing background.

Major attractions in both cities are in a centralized district. They share the same background of developing wayfinding system, which is promoting venues and satisfy the needs of increasing visitors brought by venues.

Philadelphia, Pennsylvania

Located at the confluence of the Delaware River and Schuylkill River, Philadelphia is the largest city in the state of Pennsylvania with an area of 141.6 square miles, and the fifth most-populous city in United States. The population of the city is 1,567,442, and the density of the city is 11,635.3/ sq mi.

Wayfinding program in the City of Philadelphia is among the longest duration actively managed system in the country. The program was initialed in 1988, and the first sign was installed in 1992. This comprehensive wayfinding signage system serves vehicular, pedestrian, and public transit users. Each of the wayfinding program has its own name: Walk!Philadelphia, Ride!Philadelphia, and DirectionPhiladelphia. (Figure 15)

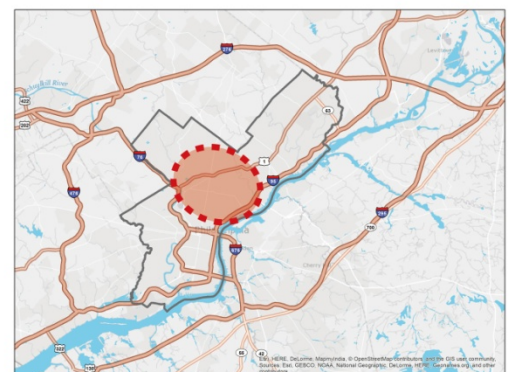
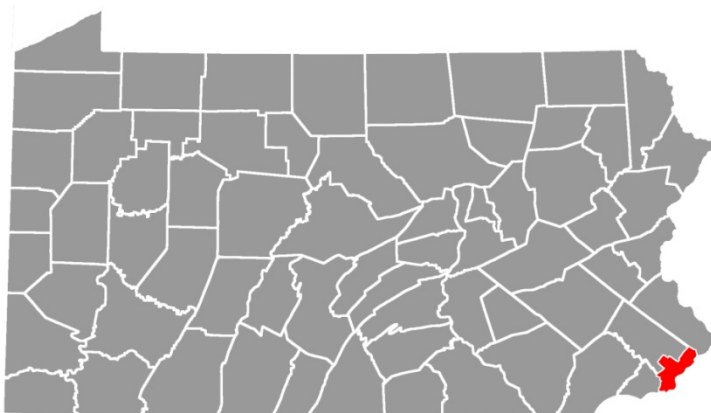


Figure 15: Philadelphia, PA and Central City, the Target Area of Walk!Philadelphia

Developing Background

The project started as the DerectionPhiladelphiha vehicular wayfinding program in Center City Philadelphia. In 1985, the Foundation for Architecture (FFA) held a public forum and came up with the wayfinding idea with city agencies, area tourist attractions, local businesses and institutions and organizations such as the American Institute of Graphic Arts. The Foundation for Architecture (FFA) led the stakeholder process, managed the Sussman/Prejza design team, and implemented and managed the program. In 1988, the William Penn Foundation supported the committee with a three-year grant to develop the wayfinding signage program.

Signage Information and Design Elements

Walk!Philadelphia is part of a \$26 million streetscape improvement project. The target area of this program is Center City District, about 3 square miles. Since the program has been developing, Walk!Philadelphia now covers Philadelphia from the Delaware River west to 42nd Street and from Vine to South Street featuring 1,368 directional faces on 684 signs and 870 diskmaps on 435 signs (Figure 16).

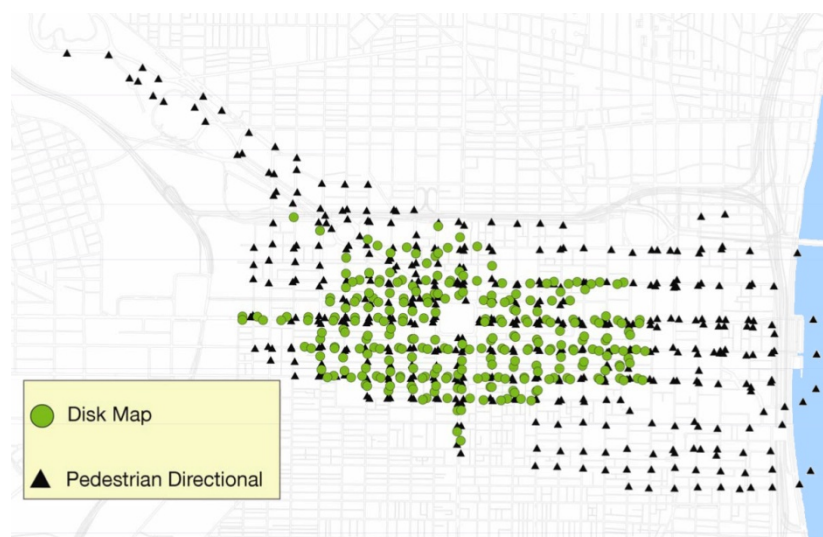


Figure 16: Pedestrian Signs Distribution

Photo: <http://www.dvrpc.org/Transportation/BicyclePedestrian/>

The pedestrian wayfinding includes two types, directional sign and diskmap. Directional signs (Figure 17) located at each street corner, displaying 6 to 10 nearby destinations. The double-faced directional signs also show the name, color, and icon of the district at the location. Destinations and areas shown on the disk maps are in 2-5 blocks radius.



Figure 17: Directional Signs

Photo: <http://www.lhsigns.com/wp-content/uploads/2012/08/4-Walk-Philadelphia-urban-wayfinding-sign-on-Broad-Street-in-front-of-City-Hall-resized-600.jpg>

The simplified, diagrammatic Diskmaps (Figure 18) are located mid-block on both sides of the streets. Their facing the direction the viewer is facing at the top of the map makes visitors orient themselves easily. For example, if the destination on the map is towards the top and left to the map, visitors would simply walk forward and turn left. The map divides Center City into five color-coded districts. Major landmarks and significant business and cultural districts are shown on the map. A "You Are Here" star with a 10-minute walking radius help users determine their walking distance.



Figure 18: Disk Map

Photo: https://c1.staticflickr.com/5/4103/4947692774_12e218edce_b.jpg

According to a report "Greater Philadelphia Pedestrian wayfinding" by Delaware Valley Regional Planning Commission, the cost is approximately \$1,000 for each sign including installation. Besides, cleaning and rehangng would cost \$150 each, while add or remove stakeholders cost \$50 for each sign. It was estimated that 10% of the system will require repairs annually, which comes out that annual budget for sign maintenance is approximately \$100,000.

Feedback and Recommendation

In a Center City District's demographic report on population changes, it was shown that the population of the Center City has increased 16.2%, while other areas of the city declined 5.2% in the past ten years. The program was a pioneer in many of the stakeholder and management systems seen today. In the last ten years, Center City area has been walkable and pedestrian friendly, with new residential development, business growth, and an increase in shops, restaurants, and outdoor cafes, which should be credit to the successful wayfinding system.

Reasons to be Selected

Walk!Philadelphia is an effective project, it has helped improving walkability of the city, promoting business and economic development, and making the area better to live in. These

achievements indicates that Walk!Philadelphia is a successful wayfinding project, and is also what we are chasing for in Metro Center, Springfield. This project has been used as case study for a lot of cities' wayfinding developing plan as well.

Portland, Oregon

Portland is the largest city in the state of Oregon and the seat of Multnomah County. It is located in the Willamette Valley region of the Pacific North, and at the confluence of the Willamette River and Columbia River. The city has an area of 145 square miles and a population of 632,309 in 2015. The density of the city is 4375.1/sq mi.

Portland pedestrian wayfinding signage system is a pedestrian-oriented informational and directional signage program in downtown Portland and Lloyd District. The wayfinding system not only directing the way, brand the city and district, but also integrated with public art.

This project and Walk!Philadelphia use similar aesthetics for static signage to connect districts and highlight transportation features. (Figure 19)

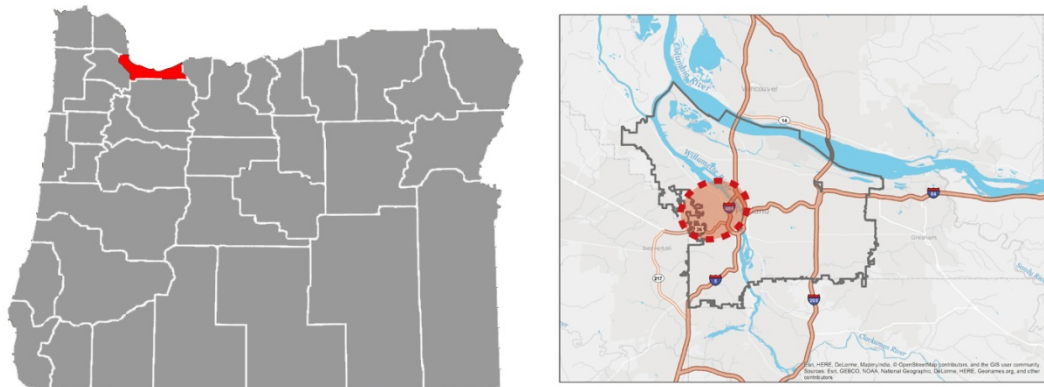


Figure 19: Portland, OR

Developing Background

The project grew from recommendations included in the 2001 Lloyd District Development Strategy and 2002 Downtown Retail Strategy. Portland Development Commission (PDC) and

Portland Office of Transportation (PDOT) started to develop the project in May 2003, and it has been completed in 2009.

The project was developed with Joel Katz Design Associates (JKDA), which is responsible for the successful Walk!Philadelphia project.

Signage Information and Design Elements

The target area (Figure 20) includes downtown district, Lloyd District, Pearl District, Old Town/Chinatown District, and University District. The wayfinding system not only connects people to landmarks and points of interests, but also links people to high-quality transit options, such as MAX light rail, city streetcar and bus service.

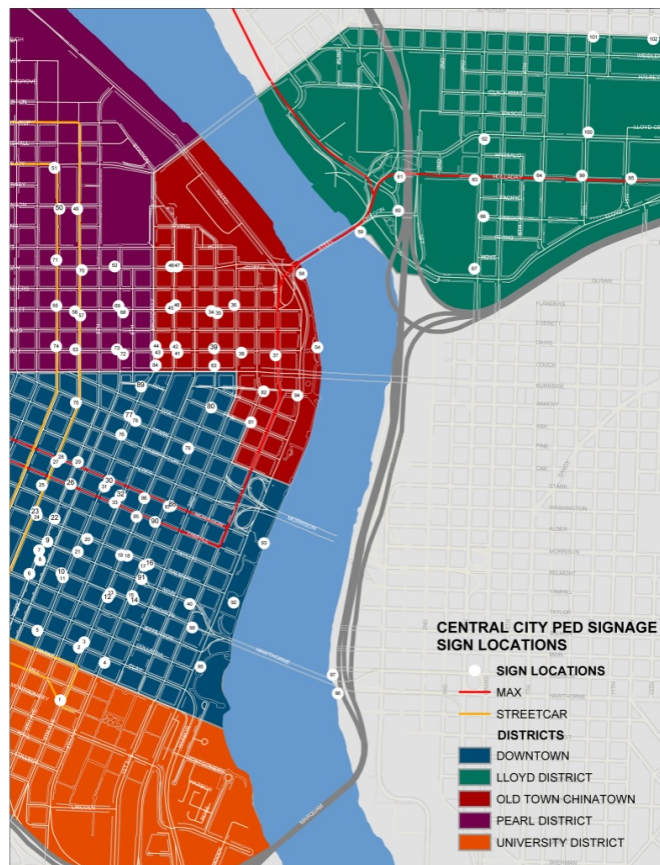


Figure 20: Target Area and Sign Locations

Photo: <https://www.portlandoregon.gov/shared/cfm/image.cfm?id=164044>

The whole system includes 102 signs. The signs (Figure 21) are self-standing pylon signs which are located within the furnishing zone of the sidewalk right of way. Each sign has two faces: one face is the system map and the other face is the district map, both faces have directional information and transportation transit information. Color-coded signs and map elements create a destination catalog and simplify understanding the layout of the city.



Figure 21: Two Faces of a Pedestrian Sign

Photo: <https://www.portlandoregon.gov/transportation/article/98859>

In addition, the wayfinding system sponsorship program help brand local businesses, and fund the maintenance fee. The program allow business credit on the wayfinding signs, which can

show their support of downtown retail and activity. Sponsorship is \$400 per sign face for two years, which allow maintenance and expansion of the system without using additional tax payer dollars.

Feedback and Recommendation

I have been to Portland for a trip in winter 2015. Even in the cold winter and snowy weather, pedestrians were still everywhere. Visitors are always packed in Portland, and the wayfinding signs really helped a lot. I even spent one day walking around the entire five districts in Portland studying open spaces, such as Lovejoy Plaza and Keller Fountain Park designed by famous landscape architect Lawrence Halprin.

In the five districts area, there are numerous retails, open spaces, cultural attractions and other venus, most of the streets are one-way, the climate is always warm... All these features become the reasons Portland is a walkable city. In that case, wayfinding signs are necessary for pedestrians, especially for visitors.

Reasons to be Selected

The area of wayfinding signage coverage is approximately 1.1 square miles, which is close to Springfield, 0.92 square miles of the target area. Population density of the two cities are similar as well. In that case, it would be a good lesson to learn that how many signs are needed, where to install them would serve such people in certain area for Springfield.

Springfield, Oregon

Springfield is located west of the state of Oregon. It is separated to the neighboring city by Interstate 5. The city has a total population of 59,403, and the area of the city is 15.75 square miles. The density of the population is 3,774/sq mi.

The wayfinding program was started in 2012, Walk!Philadelphia and Charlotte Wayfinding System were used as case studies. (Figure 22)

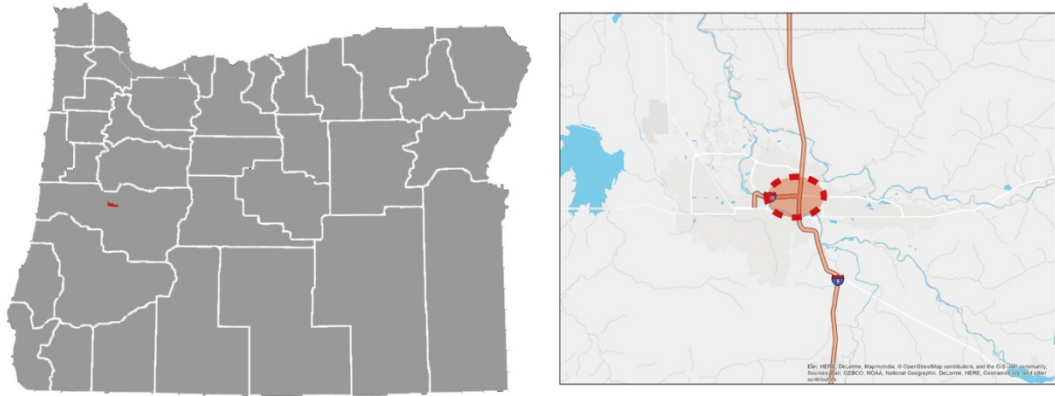


Figure 22: Springfield, OR and Target Area of the Wayfinding Program

Developing Background

Springfield lacked standards to regulate community wayfinding signage. Signs were installed based on individual needs and manuals from different offices. Lack of coordination had resulted in the placement of signage without full consideration of specific local needs.

City spatial arrangement is one of the challenge for wayfinding system planning in Springfield. The boundary of the city is heavily influenced by surrounding natural features, rather than radial patterns in most cities. The downtown heart is not the geographic center of Springfield, but the southwest area where the city oriented, which makes Springfield unique.

When the city of Springfield studied about the existing logic of the city, they examined how the city is currently based; how individuals are navigated; how individuals communicate travel directions to others; and how a visitor interprets the navigational tools available to him/her. Springfield created their existing logic map (Figure 23) based on the research, which has been used in map kiosks as base map.

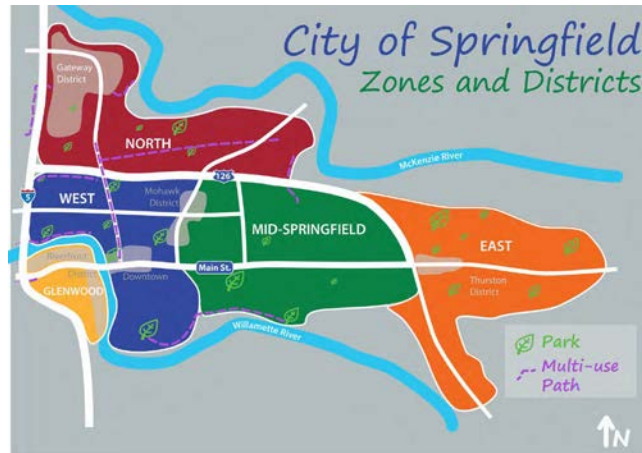


Figure 23: Springfield, OR Logic Map

Photo: <https://scholarsbank.uoregon.edu/xmlui/handle/1794/12608>

After analyzing over 400 current wayfinding along the major corridors of the city, and survey among residents and city staff, Springfield came up with unifying treatment apply to varying component of the city, which include: entry points, zones, districts, multi-use paths, public transit stations, and parking areas.

Signage Information and Design Elements

Wayfinding signage in Springfield includes vehicular signage and pedestrian signage. New wayfinding signs were installed based on existing signs, some of the existing signs were removed after research.

Pedestrian signs (Figure 24) include two types. One is self-standing color-coded parcels with walking distance and approximate time providing directional information about nearby attractions, the other is map kiosks show citywide map. The destinations shown on the signs are the results after interviewing 67 local residents and officers. 121 pedestrian signs has been installed in the city.

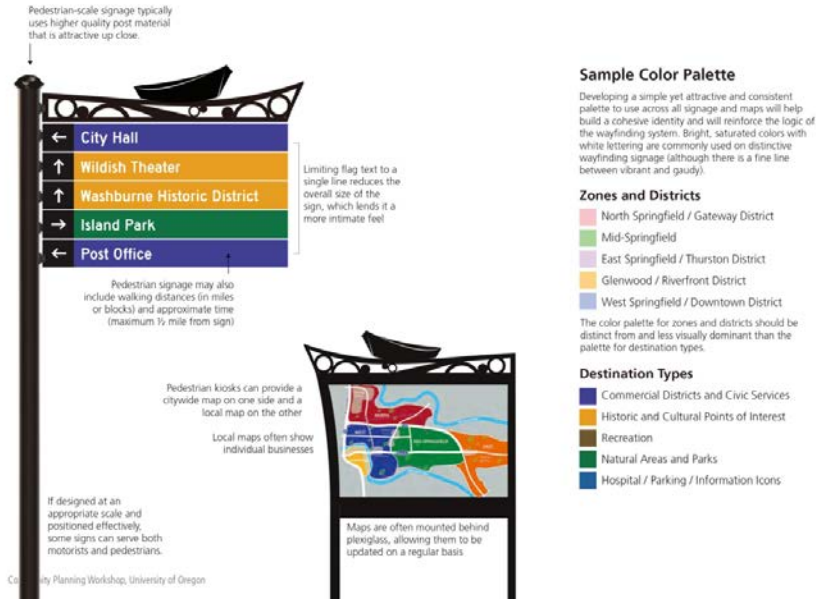


Figure 24: Pedestrian Directional Sign and Map Kiosk

Photo: <https://scholarsbank.uoregon.edu/xmlui/handle/1794/12608>

Vehicular signage (Figure 25) are directional signs with color-coded parcels that are accordant to pedestrian signs, with well-designed "Springfield Oregon" on the top to brand the city.

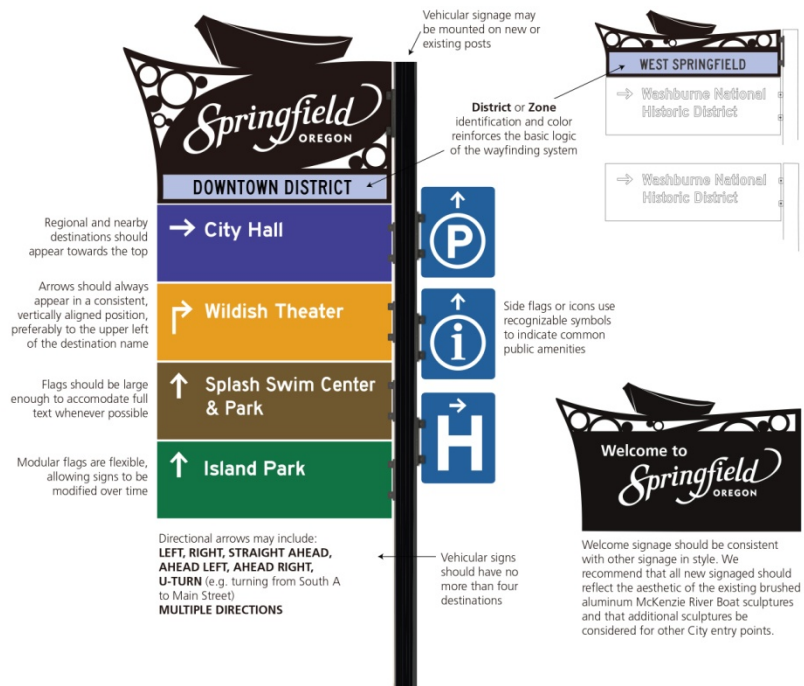


Figure 25: Vehicular Signs and Welcome Sign with the City Motto.

Photo: <https://scholarsbank.uoregon.edu/xmlui/handle/1794/12608>

The wayfinding system incorporated public art and murals into the program. (Figure 26)



Figure 26: Public Art Incorporated with Wayfinding in Springfield, OR

Photo: <https://scholarsbank.uoregon.edu/xmlui/handle/1794/12608>

Feedback and Recommendation

Wayfinding system in Springfield created an identifiable logic for the city, highlighted key destinations, and help improved bicycle navigation and connectivity.

Reasons to be Selected

Pre-installation research by the city of Springfield created the logic map of the city, which helped understanding the existing condition of the city. The city has created unified standards to regulate signage system in Springfield in this program.

Portland, Maine

Portland is the largest city in the state of Maine. The Greater Portland metropolitan area is the home of over half a million people, more than 1/3 of total population in Maine. The city has a population of 66,881 in 2015, growing exactly 1% since 2010. The area of the city includes 21.31 square miles of land and 48.13 square miles of water. The density of population is 3,107.2/sq mi.

Portland has a diverse culture, it has both historic and modern in architecture and lifestyle. The city is a tourist attraction. All visitors need to locate where they are, where they want to go, and how to get there in a clear, consistent and efficient way. The wayfinding program in Portland aimed at four districts: Old Port District, Waterfront District, Art District, and Government District.

(Figure 27)

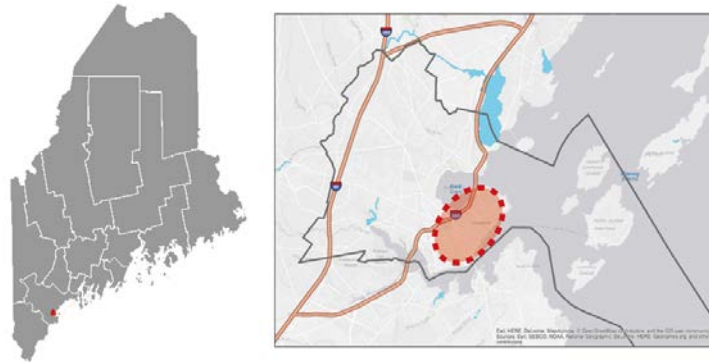


Figure 27: Portland, ME and Target Area of the Wayfinding Program

Developing Background

The city of Portland has received numerous complaints from the visitors to Portland regarding to the difficulties they have encountered finding their way around the city to experience the attractions. As motorists, visitors have trouble making their way from the highway exits, along the roadway networks, and on circulation routes in some districts when trying to locate attractions. Once transitioned from motorists to pedestrian, visitors have experienced difficulties in navigating through and between the Old Port District, the Waterfront, Downtown, and the Cultural District. All these troubles were caused due to a lack of a fully comprehensive wayfinding signage system that provided clear pedestrian and vehicular directional information and district map kiosks. In order to solve these problems, and provide a major enhancement to visitors to attract tourists, institutional and business travelers, the city of Portland started its Wayfinding program in January 2008.

While Portland has good printed and internet materials for education, branding and orientation purposes, visitors do not always have access to or aware of the media. The city is lacking repetitive information at street level, educating visitors of the additional destinations within the city. The staffed information kiosks (Figure 28) are quite useful, however, they only open at particular season among the year.



Figure 28: Information Kiosk

Photo: <http://www.portlandmaine.gov/DocumentCenter/Home/View/2214>

Signage Information and Design Elements

The goal is developing written criteria that would become binding city ordinances for the signage program and to create a functional and aesthetically appealing wayfinding for visitors and residents.

Wayfinding signs program in Portland includes pedestrian signs and vehicular signs.

Pedestrian signs include two types. One (Figure 29) is self-standing double-sided panels mounted on the pole, with color-coded district names on the top, directional and transportation information in the middle, and major attractions on the base. Signs are serving four districts (Figure 30): arts district, old Port district, waterfront district, and government district.¹ Directional signs has been installed. The other (Figure 31) is map kiosks. Map kiosk will provide attraction information and district map.



Figure 29: Pedestrian Directional Signage Face

Photo: <http://www.portlandmaine.gov/DocumentCenter/Home/View/2214>

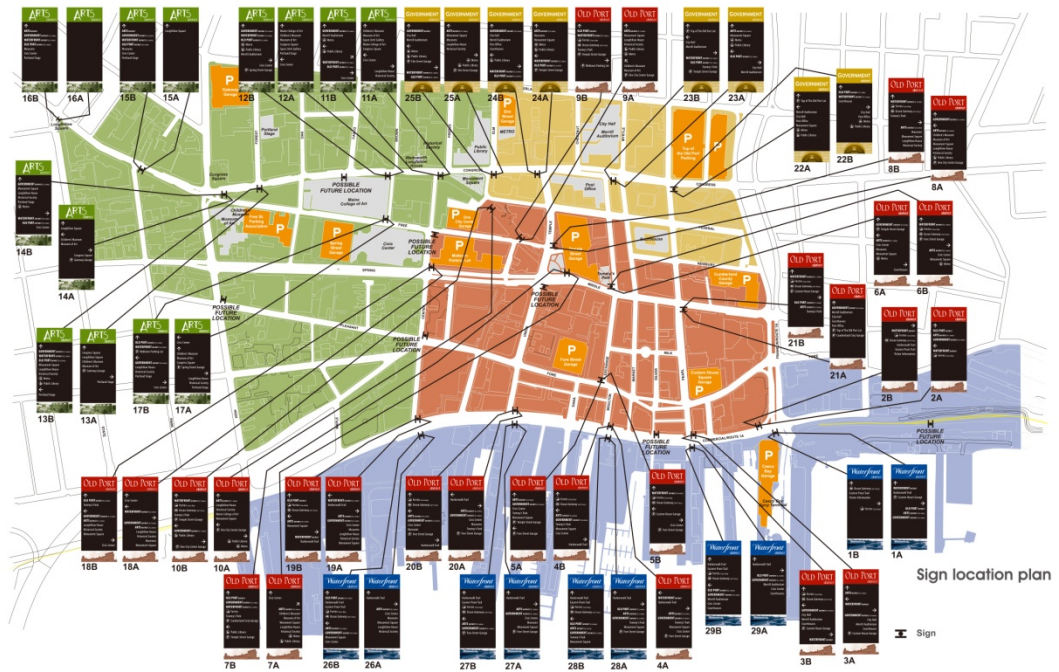


Figure 30: Sign Locations

Photo: <http://www.portlandmaine.gov/DocumentCenter/Home/View/2214>



Figure 31: Pedestrian Directional Sign and Map Kiosk

Photo: <http://www.portlandmaine.gov/DocumentCenter/Home/View/2214>

Vehicular signs (Figure 32) include directional signs, welcome signs and parking signs.

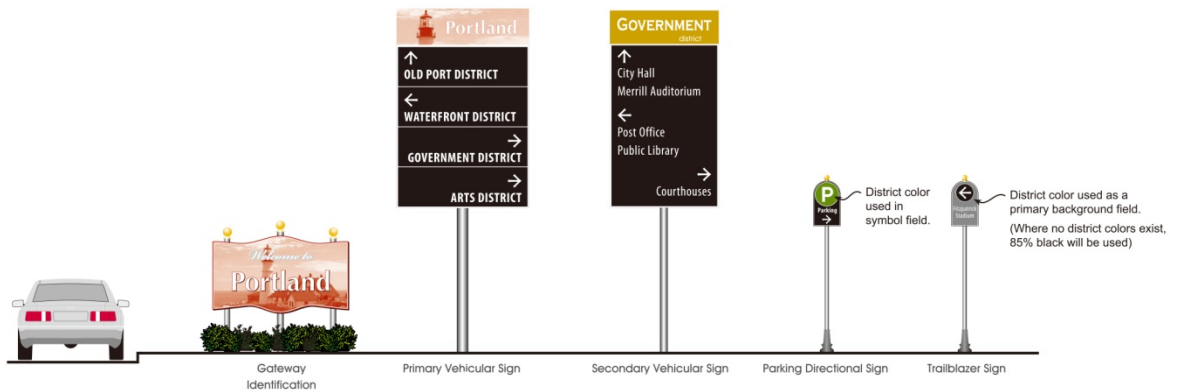


Figure 32: Vehicular Signs

Photo: <http://www.portlandmaine.gov/DocumentCenter/Home/View/2214>

Feedback and Recommendation

The intent of the wayfinding program is to provide a consistent and repetitive information path to a destination through pedestrian directional signs. Signs will be only installed in areas and attractions meet the specific criteria, such as constantly open more than 8 months in a year, and minimum open from 9am to 5 pm.

Parking facilities, police department, and transportation facilities will be shown on pedestrian directional signs. However, historical landmarks, churches and religious institutions, immediate emergency are not included in directional signs.

In map kiosks (Figure 33), information about nearby attractions, public services, medical services, open spaces, and transportation are provided. Visitors can understand the city easily by reading the map and locations. With the information provided, all attractions can be accessed much easier.

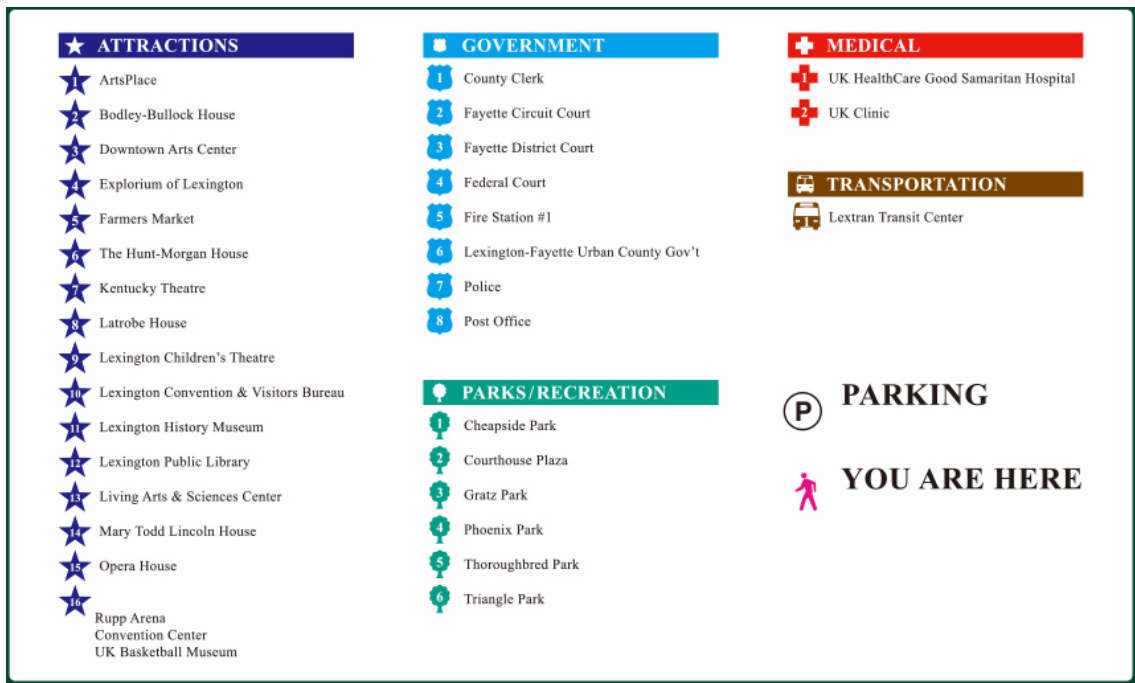


Figure 33: Pedestrian Map Kiosk

Photo: <http://www.portlandmaine.gov/DocumentCenter/Home/View/2214>

Reasons to be Selected

Portland and Springfield, MA have similar size of the city, population density, and target area are at waterfront. According to City of Portland Wayfinding System Study Report, one of the most important phase in pre-installation study is list all attractions that will be shown on the pedestrian signs based on the criteria, which can be studied about.

New York City, New York

Located at southern tip of New York State, New York City is the center of the New York Metropolitan area, and one of the most populous and densely populated urban area in the world. The city is crowded by not only local residents and visitors, but also people coming to New York for different purposes.

WalkNYC is a new program of pedestrian maps that makes it easier for New York's 8.5 million residents and 50 million yearly visitors to navigate the city streets. The WalkNYC signs are being installed in summer 2013 in the city. (Figure 34)

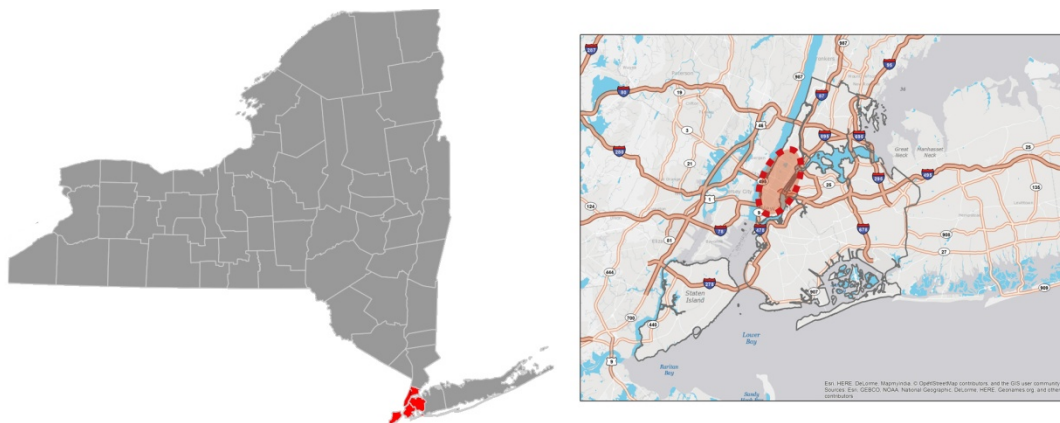


Figure 34: New York City, NY and target area of WalkNYC program

Developing Background

New York City is well-known as a walking city, but pedestrian-oriented information is hard to find and inconsistent even it is available. The streets of the city are a mix of named and numbered streets, with buildings have various conventions, and street merging at confusing angles. It is difficult to navigate at even a simple street grid in Manhattan when merging form a subway station or transit center. While the city has many vehicular signs can provide little benefit for pedestrian. The goal of WalkNYC is to remedy the information and navigation gap.

Signage Information and Design Elements

The self-standing WalkNYC sign (Figure 35) includes five parts, beacon on the top, street name and district name of the current location, directional information, focus map, and overview map. The 8 ½ feet tall sign provides a 5-min walk radius on the focus map to help pedestrians determine their trip mode, and promote walking. The orientation of the WalkNYC map uses "heads-up mapping" in which north, south, east, or west is rotated to correspond with the direction the user is facing. For example, if the person is facing south in Manhattan, the top of the map is doantown, and the bottom is uptown; and if the person if facing north, the information is reversed.

WalkNYC signs (Figure 36) provide valuable information, from basic directions and street names to specific details such as Wi-Fi hotspots and subway entrances.



Beacon
Locator

Directional

Focus map

Overview map

Figure 35: WalkNYC Pedestrian Sign

Photo: http://www.designboom.com/wp-content/uploads/2013/06/pent_WalkNYC_08.jpg

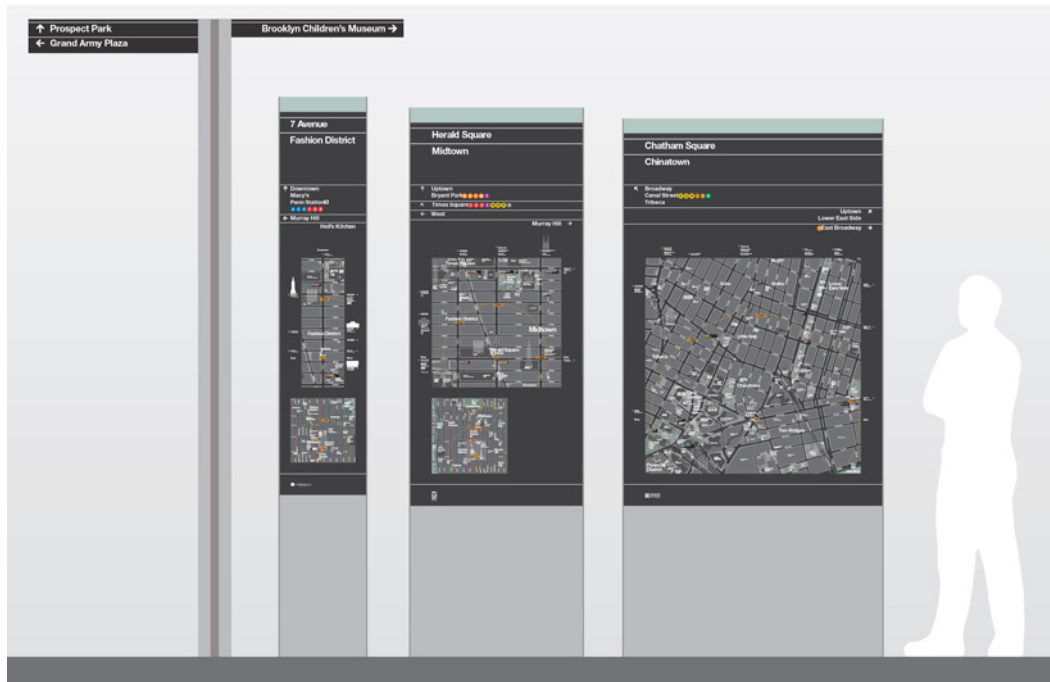


Figure 36: Range of Signage Types has been Developed for Different Urban Environments

Photo: http://www.designboom.com/wp-content/uploads/2013/06/pent_WalkNYC_07.jpg

The New York City Department of Transportation (DOT) and the Metropolitan Transportation Authority (MTA) with the partnerships have installed new WalkNYC maps at all subways and Staten Island Railway Stations. MTA used to install 68 different neighborhood maps in stations with each map used in several stations. The new maps are the same size with the old ones, but they provide each station with a unique and more detailed map centered on the station.

Feedback and Recommendation

WalkNYC is the standard of pedestrian wayfinding in New York City. It provided a clear visual language and graphic standard that is universally understood, encouraging people to walk, bike, and use public transit by providing high quality multi-modal information, and provide consistent information in the wild city.

WalkNYC program won the Merit Award in 2016 by SEG. The jury Comments was: "A prototype setting a future language for all global cities. Informed travelers activate sidewalks and reinvigorate neighborhoods."

Reasons to be Selected

WalkNYC is a successful wayfinding system that provide not only directional information but also nearby detailed information. Information on the signs is enough, but not too much. This wayfinding program serves millions of people in New York City and it works well.

Raleigh, North Carolina

Raleigh is the capital of the state of North Carolina. The city covers a land area of 142,8 square miles, with the population of 451,066. The density of the population is 3,158.7/sq mi. Raleigh is known as the "City of Oaks", as many oaks trees growing on the streets in the heart of the city. The city of Raleigh is one of the fastest-growing city in United States.

Walk Raleigh is an awarded project. It won the ASLA Student Honor Award in 2012. The project is so high-efficient that the group of 3 people planning the project in one week with only \$275 cost, 27 signs were installed in 3 intersections in downtown Raleigh in an hour. (Figure 37)

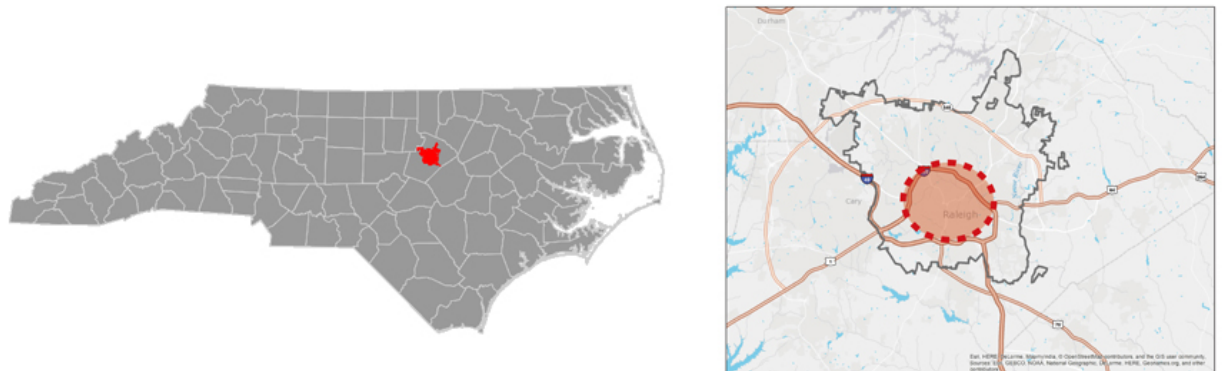


Figure 37: Raleigh, NC and Target Area of Walk Raleigh Program

Developing Background

The project Walk Raleigh started as a technically illegal exercise in improving pedestrian experience in Raleigh, North Carolina. It is intended to share how far it is to walk to places in minutes by foot versus by car in Raleigh, as it has been found out that one if the biggest problem

with walking in Raleigh is public perception, which was hoped to be influenced positively by this project.

The project was brought out by Matt Tomasulo, a graduate student in North Carolina State University in 2012. He then founded Walk [Your City], an emerging, software-based approach to creating campaigns of street signs for people, to promote this type of wayfinding signs in other cities besides Raleigh.

Signage Information and Design Elements

Walk Raleigh started as 27 signs installed in 3 intersections around downtown Raleigh. The signs (Figure 38) included an arrow, destination, color, QR code, and text showing how many minutes would be spent by walking to the destination. The signs are meant to help people think differently about distances in the city, and to encourage them to get out of their cars and explore the place by themselves.



Figure 38: Walk Raleigh Signage

Photo: <http://www.spontaneousinterventions.org/wp-content/uploads/2012/08/121crop.jpg>

When it showed up in 2012, the project drew international notice and has received a lot of favorable press coverage. It was also noticed by Raleigh's city government, which took the signs down for violating local ordinances. But the signs went back eventually as a pilot education project.

Feedback and Recommendation

Signs in this project show time-spend information rather than distance, which is more direct and easier to understand. It is a great innovation and helps promote walking. It is not only a matter of change in graphic design field, but give planners and city officials a lot to think about.

Reasons to be Selected

This project is a low cost, less time spent, but high-efficient project. Showing walking time on the sign is definitely worth trying under the circumstance that public perception lacks of sense of time and distance. Let alone the graphic design of Walk Raleigh, I think the concept made revolutionary progress.

Dorchester Community, Boston, Massachusetts

Dorchester, with 6 square miles area and 134,000 population, is the largest neighborhood and the most diverse community in Boston, MA. It is an aggregation of newer immigrants from Ireland, Vietnam, and Cape Verde. The first Vietnamese Community Center in the country is located in Dorchester. Nearly 60% of the population earn less than \$40,000 a year and most of them live in rental units. Besides, 25% of the Boston's distressed buildings are located in the community.

The wayfinding project in Dorchester aimed at Dorchester Avenue, where aggregates local businesses, such as restaurants, beauty salons, electronic stores, and pharmacies. Franklin Park, considered the "crown jewel" of Frederick Law Olmsted's Emerald Necklace Park System is located in Dorchester as well. The park includes 527 acres of green space and walking path, a zoo, and an 18-hole municipal golf course. (Figure 39)

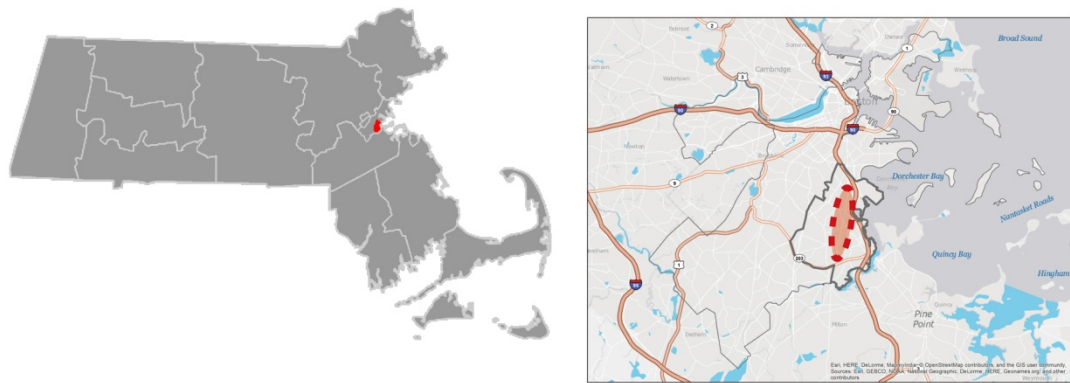


Figure 39: Dorchester Community, Boston, MA and Target Area of the Wayfinding Program

Developing Background

In 2014, Dorchester Community collaborated with WalkBoston and local organizations planning a wayfinding system on Dorchester Avenue to make the area more walkable. This new wayfinding system will be built to help orient pedestrian to the public transportation and nearby open spaces, such as Clifford Playground and the shoreline park system in South Boston/Dorchester (Newmarket); Franklin Park (Four Corners/Geneva Avenue); and Harambee Park as well as Franklin Park (Talbot Avenue).

According to street survey by WalkBoston, Dorchester Avenue has following issues for installing new signs: too many apex sidewalk ramps which resulted in slanted rather than straight sidewalk; long sidewalk at intersections in Andrew Square is frightening. In addition, curb radii that have been tightened at several intersections is a positive feature that will help create safer pedestrian crossings.

WalkBoston is a non-profit pedestrian advocacy organization dedicated to improve walking conditions throughout Massachusetts. WalkBoston makes walking safer and easier in Massachusetts to encourage better health, a cleaner environment and vibrant communities. WalkBoston has represented over 106 cities and towns since 1990.

Signage Information and Design Elements

Signage (Figure 40) in Dorchester are 18" by 18" temporary signs, presenting directional information and approximate walking and biking time to the destination, with a brightly colored and standardized design. The information would promote walking and public transit. Each sign cost \$25, which has been pretty low among all wayfinding projects.

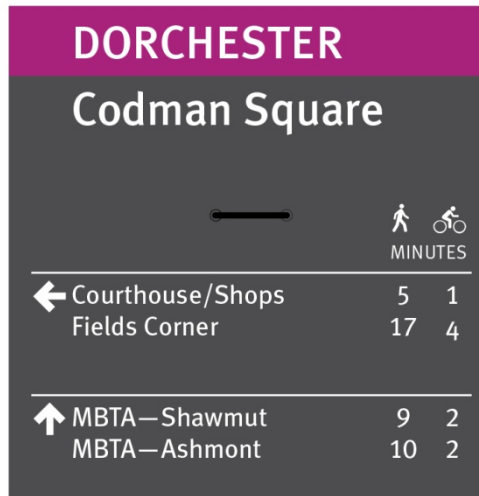


Figure 40: Dorchester Temporary Wayfinding Signage

Photo: <http://walkboston.org/sites/default/files/WalkBoston%20-%20Low%20Cost%20Pedestrian%20Improvements.pdf>

Feedback and Recommendation

Due to the research done by WalkBoston, design solutions have been taken to improve sidewalk and intersections, and torn down ineffectiveness signs. Dorchester Wayfinding project is one part of the work improved by WalkBoston, which has long worked with many community partners to improve the walking-transit connection because it is crucial to providing the necessary mobility options for transit dependent communities.

According to the report "Pedestrian Infrastructure: Strategies for improving pedestrian safety through low-cost traffic calming" by WalkBoston, the primary advantages of temporary signs are cost less, easier to change, and could be more creative and encouragement.

Reasons to be Selected

WalkBoson is one of the sponsorships in Springfield's wayfinding program. As Springfield shares the same goal with Dorchester, wayfinding system on Dorchester Avenue is a perfect case to learn from. Moreover, signage graphic design would be nice to be unified throughout Massachusetts.

Ottawa-Vanier, Canada

Ottawa-Vanier (Figure 41) is the east part of the City of Ottawa, it is a historically francophone neighborhood in the Rideau-Vanier Ward in Ottawa, Canada's east end. The neighborhood was a separate city until amalgamated into Ottawa in 2001.



Figure 41: Vanier Neighborhood, Ottawa, Canada and Target Area of the Wayfinding Program

Developing Background

In late 2012, a group of residents on the Vanier Community Association (VAC) submitted an application to the City of Ottawa Better Neighborhoods Program, which supports community improvement projects and provides \$30,000 findings for selected projects. The idea of the project included a neighborhood wayfinding system, a network of community bulletin boards and a

Festival of Nations. The goal of the project is supporting small scale community and activate neighborhood. The project was planned in 2013 and wayfinding signs have been installed in 2014.

Signage Information and Design Elements

30 signs (Figure 42) have been installed throughout Vanier neighborhood in Spring 2014. Destinations on these signs are non-commercial places such as parks, community center, and social services. Each sign will display distance and approximate walking/biking time, the QR code on the bottom can direct users to VCA website for more local information. Signs will be completed by a series of community maintained directories. In addition, community postings will be installed in visible sites among pedestrian traffic.



Figure 42: Vanier Wayfinding Signs

Photo: http://2.bp.blogspot.com/-6sXR4uhkILc/Uu8UYZimzdl/AAAAAAAAACmk/sF90uuCbD70/s1600/5+VanierNow_signs_Eva_Russell_wayfinding_2014.JPG

Feedback and Recommendation

Inspired by Walk Raleigh, this project was initiated by local residents, who understand the surroundings the most. They know what they need in their community, and the challenge as well. This project is a great achievement within the work of the entire neighborhood.

Reasons to be Selected

The project in Vanier was brought out and done by local residents, which is quite different from most of other cities that sponsored by city officials. From this project we can tell that residents have needs for clear and logical wayfinding and well-planned streets.

Springfield, Massachusetts

Springfield, MA (Figure 43) is located in western New England. It is the third-largest city in Massachusetts and the seat of Hampden County. Springfield sits on the eastern bank of the Connecticut River near the confluence with three rivers: the western Westfield River, the eastern Chicopee River, and the eastern Mill River. The population of the city of Springfield is 153,060 and the area of the city is 32.1 square miles. the density of the population is 4,768.2/sq mi.

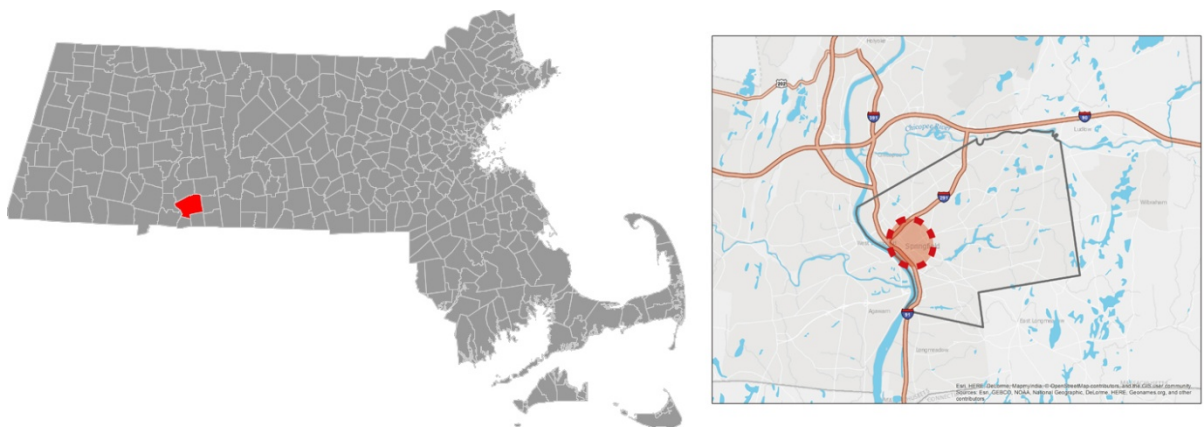


Figure 43: Springfield, MA and Target Area of the Wayfinding Program

Developing Background

According to the Proposals for the Downtown/Metro Center Streetscape & Pedestrian Wayfinding Enhancement Initiative Springfield 1422, the City of Springfield has a number of planning initiatives in downtown Springfield /Metro Center in recent years, including the 2014 Pedestrian and Bicycle Complete Streets Plan (1422 Plan), the Residential Market Potential Report

(Zimmerman and Volk-2013), the Worthington Street District Planning Study (Utile 2014), and the downtown Transformative Development Initiative (TDI-2015). The City of Springfield also got 1422 funding from the Massachusetts Department of Public Health to improve the walkability of downtown area, and focusing on the needs of vulnerable populations.

The new wayfinding system is part of the plan of 2014 Pedestrian and Bicycle Complete Streets Plan (1422 Plan). This work consists of three parts:

1. Finalizing the conceptual prepared by Pioneer Valley Planning Commission (PVPC).
2. Streetscape design for selected streets which had been identified in conceptual plan.
3. New Pedestrian Wayfinding.

Signage Information and Design Elements

Downtown Springfield/Metro Center is the legal, cultural, civic and economic heart of the Pioneer Valley Region. The target area is one of the region's largest employment centers and is home to a growing residential community. A new system of pedestrian wayfinding signage will be installed throughout the target area. This new system will replace all existing kiosks.

The new wayfinding signage will be installed in downtown Springfield/Metro Center, from Main Street to Elliot Street, and from State Street to Liberty Street. (Figure 44)

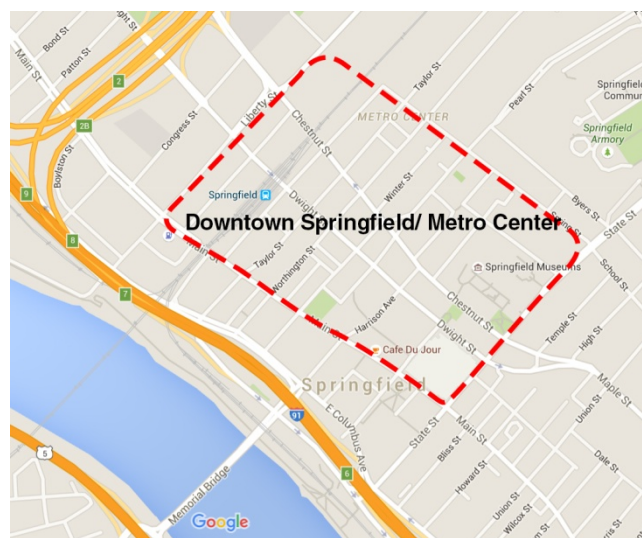


Figure 44: Focus Area, Main Street - Elliot Street, State Street - Liberty Street

The target people are employees, residents, annual visitors, and vulnerable population in downtown Springfield.

Feedback and Recommendation

46 signs have been installed by April 26, 2016 in downtown Springfield. The program received \$60,000 from a state Department of Public Health grant. The 46 temporary signs (Figure 45) are the first phase of the program to test the reaction from pedestrian. The directional signs will provide necessary information to the thousands of visitors the city will host when Union Station is operational later 2016 and MGM Springfield opens in the fall of 2018. Other signs will be installed by 2018.



Figure 45: One of the temporary signs near 1331 Main St.

Photo: <http://cdn.there minder.com/getimage.asp?id=/localnews/springfield/springfieldwayfindingprogram/&filename=wayfinding.jpg&mode=9>

Summary and Recommendations

From all case studies, there are several design ideas and principles can be summarized and can be applied in Downtown Springfield wayfinding project potentially. (Appendix A)

Design Ideas from case studies

- Unique Character on Sign
- Walking Radius
- Provide transit options (light rail, bus, subway, etc.)
- Sponsorship for local businesses
- Logic Map
- Collaborate with public art
- Color-coded for each district
- Public participation of the project

Principles

- Design standards should address all types of users, including local residents, visitors, etc.
- Each sign should provide appropriate adequate information, either too much or too poor would be confusing.
- Signage should be easy to recognized and read. They should be positioned consistently so that people can find each type of information easily.
- Signage should be in a uniform, modular frame that allows quick changes and withstand frequent cleaning.
- Types of signage could be determined by size of target area, main goal of the project, zoning of the target area, and so on. Map kiosks are recommended especially the target area is large with multiple districts.
- Temporary signage has become a trend in recent years, because of lower cost, easy to change and maintain, and short period for conduction.

Notes

¹ Rooke, Clementinah Ndhlovu, John Alfred Rooke, Lauri Koskela, and Patricia Tzortzopoulos. "Using the Physical Properties of Artefacts to Manage Through-life Knowledge Flows in the Built Environment: An Initial Exploration." *Construction Management and Economics* 28.6 (2010): 601-13. Web. Retrieved 07 Aug. 2016.
<<http://usir.salford.ac.uk/11300/>>.

CHAPTER 5

SURVEY AND DATA ANALYSIS

A survey, created by the UMass Design Center in Springfield was given to various Springfield residents and visitors in spring 2016 in order to better understand how familiar they were with the downtown (Metro Center) area. The survey had four main parts.

Part 1: Identifying a group of locations that made up “starting points” and another group designated as “destinations”.

Part 2: Survey design.

Part 3: Administering the survey to a range of persons.

Part 4: Summarizing and analyzing survey data.

Identifying Potential Starting Points and Destinations

Identifying potential starting points and destinations is an important part of the pre-evaluation work of the wayfinding program for downtown Springfield. The potential starting points should be places where people congregate and that are within walking distance of useful destinations (transportation center, service/medical, cultural centers/landmarks).

According to the proposals for the "Downtown/Metro Center Streetscape & Pedestrian Wayfinding Enhancement Initiative", the focus area (Figure 46) is from Main Street to Elliot Street, and from State Street to Liberty Street.

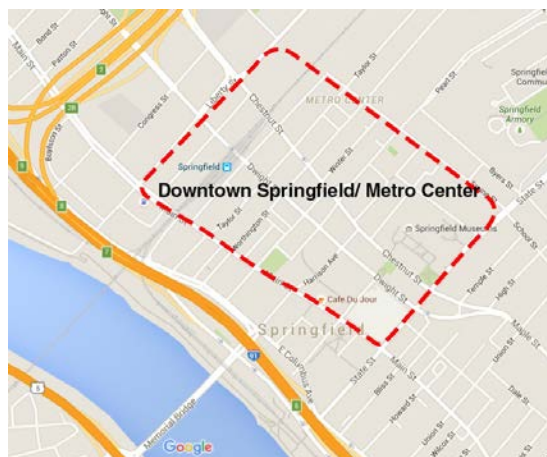


Figure 46: Proposed Target Area

Overview of Springfield Metro Center, MA

The City of Springfield is located in western Massachusetts, the seat of Hampden County, and is designated as one of the state’s important post-industrial “gateway” cities. (Figure 47) The City of Springfield sits on the eastern bank of the Connecticut River. The area of the city is 33.2 square miles , including 32.1 square miles of land and 1.1 square miles of water. The population of the city was 153,060 in 2010, and the density of the population is 4768.2/sq mi. The number has been shrunk from its high of 174,463 in 1960, and is close the population it had in 1900. The composition of the population is continually changing. Currently the city has a high percentage of Hispanic residents (27.18%). A high percentage of residents are under the age of 18 (27.89%), which makes the city much younger than Massachusetts as a whole (20.40%).¹

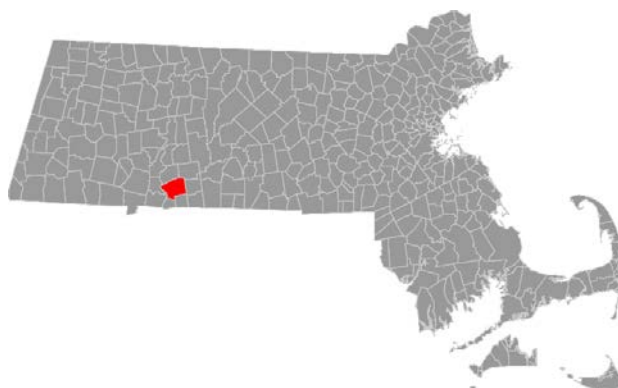


Figure 47: Springfield is located in Western Mass

Metro Center includes approximately 690 acres of land, and is where residents of the city first settled. Metro Center features a majority of the most important cultural, business, and civic venues of western Massachusetts.² These include Symphony Hall, City Hall and MassMutual Center.

Metro Center is bounded by Route 291 to the north, Union and Howard Street to the south, Federal Street to the east and the Connecticut River to the west. The city is physically separated from its riverfront by a major rail line, and Interstate 91, which was constructed as part of a federal urban renewal project in 1958.³ (Figure 48)

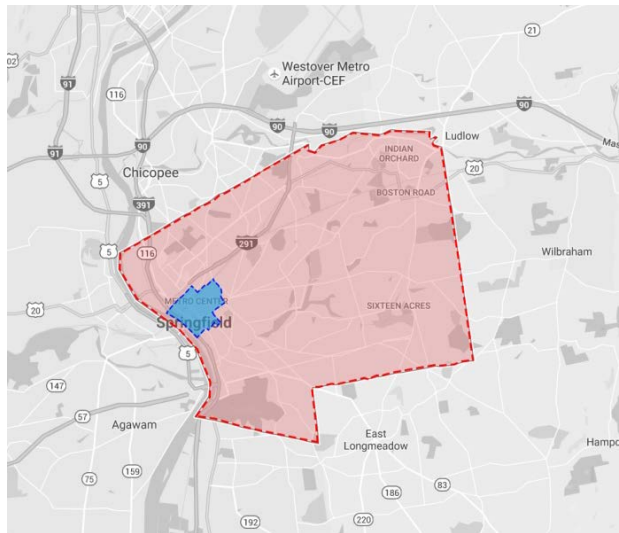


Figure 48: Location of Metro Center in Springfield

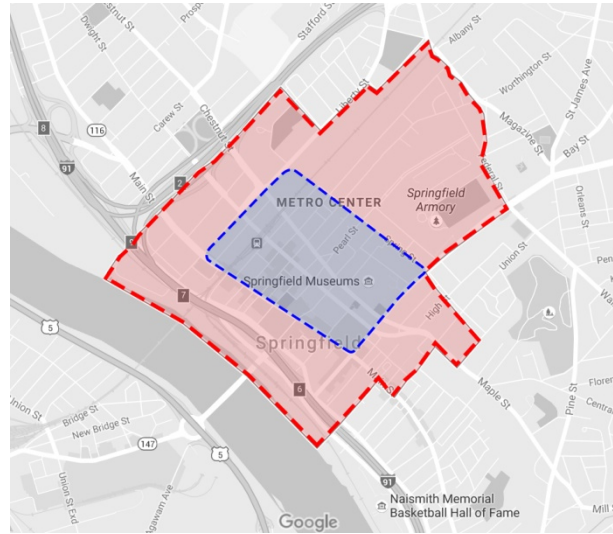


Figure 49: Target area of the Wayfinding Program

Potential Starting Points

With help from the Downtown/Metro Center Streetscape & Pedestrian Wayfinding Enhancement Initiative, 10 potential starting points were selected: Riverfront Park, MassMutual Center, Union Station, Springfield City Library, Basketball Hall of Fame, Springfield Museums, Caring Health Center, Peter Pan Bus Station, Tower Square, and Main YMCA. (Figure 50)



Figure 50: Potential Starting Points

Springfield's Union Station and Peter Pan Bus Station are the biggest transportation centers in Springfield serving residents and visitors. The museum Quadrangle, contains the Springfield City Library and Museums. The Main YMCA has a long history serving Springfield residents for many decades. The Basketball Hall of Fame is a popular attraction for both residents and visitors. The MassMutual Center is not only a place for sports, but also provides frequent musical events and serves a major anchor for downtown. Caring Health Center provides a range of healthcare for many of the city's underserved residents. Riverfront Park is an open space with beautiful views of the Connecticut River.

The "Five-Minute Walk" is a standard that describes the average distance that a pedestrian is willing to walk before opting to drive. The average walking speed of human beings is approximately 3 miles per hour, which translates to 1/4 of a mile in 5 minutes. A 10 minutes walking distance is 1/2 of a mile. In an ideal situation a person would have access to a range of useful destinations within a radius of 1/4 to 1/2 mile. Once we apply this radius to our proposed starting points (Figure 51), it is clear to see that the five-minute walking coverage does not provide access to enough destinations, while the coverage of ten-minute walking allows access to all destinations within the target area. In other words, the proposed starting points are reasonable for processing the survey.

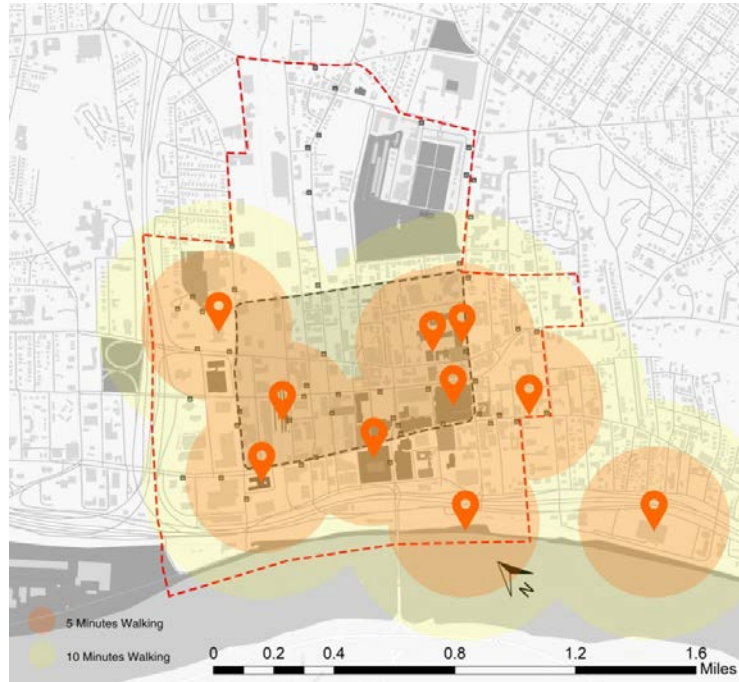


Figure 51: Five-Minute Walking Range & Ten-Minute Walking Range

Survey Goals and Objectives

To assess the ease with which people, especially pedestrians, travel to and through the downtown/Metro Center area of Springfield, Massachusetts.

The survey seeks to assist in better understanding to what extent respondents are familiar with the location of specific destinations in the downtown area. Importantly, do they know how to get to these destinations on foot, and do they know how much time it takes to get to these destinations on foot?

Also, to what extent do respondents walk in general, and what would it take to get them to walk more?

Finally, the survey asks if respondents are familiar with any existing wayfinding systems in the downtown area.

General

The surveys were conducted in person, at specific downtown locations on weekdays during the months of February and March 2016. Most surveys were conducted indoors due to the very cold weather, and during daytime hours. Respondents were selected randomly, based on their willingness to participate. A sample survey is attached. (Appendix B)

A total of 103 people were surveyed at 5 downtown locations:

- YMCA (15 respondents)
- Peter Pan Bus Station (10 respondents)
- Tower Square Food Court (50 respondents)
- Museums/Quadrangle (18 respondents)
- Classical Condominiums (10 respondents)

Limitations

The sample size of 103 respondents is adequate, but the information was gathered at a small number of locations (5 total), and was conducted on 4 separate days. Also, surveys were conducted in unequal numbers across locations (for example, 50 responses come from Tower Square, while only 10 come from Peter Pan Bus and Classical Condominiums). Furthermore, respondents were not selected in any way to approximate a “typical downtown population” or a “typical downtown resident” etc. All information was gathered in random fashion.

Summary of Data

Q#1: Have you ever been to ...?

People #	Riverfront Park	MassMutual Center	Union Station	Library	Basketball Hall of Fame	Museums	Peter Pan Bus Station	Caring Health Center	Main YMCA	Survey Locations
1										Tower Square (50 Respondents)
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
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Yes	26/103 (25%)	62/103 (60%)	26/103 (25%)	58/103 (56%)	43/103 (41%)	50/103 (49%)	51/103 (50%)	20/103 (19%)	35/103 (34%)	Peter Pan Bus Station (10)
No	77/103 (75%)	41/103 (40%)	77/103 (75%)	45/103 (44%)	60/103 (59%)	53/103 (51%)	52/103 (50%)	83/103 (81%)	68/103 (66%)	
										Classical Condos (10)
										Museums (18)

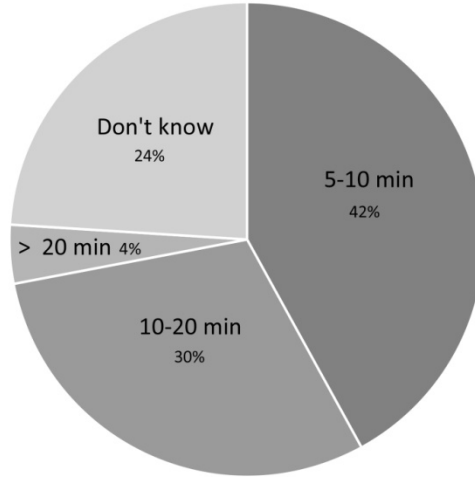
Table 1: Have you ever been to ... (destinations)?

Q#2: Do you know how to walk to ...?

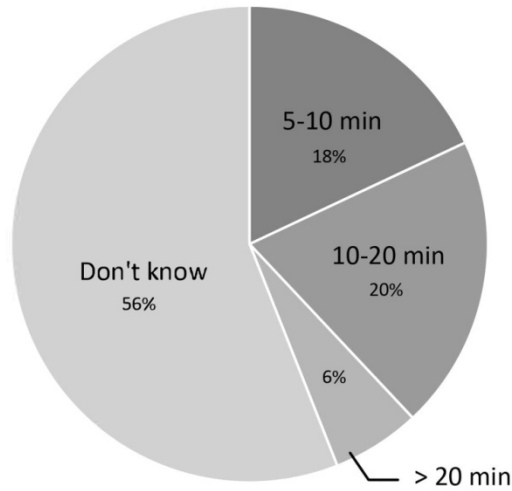
People #	Riverfront Park	MassMutual Center	Union Station	Library	Basketball Hall of Fame	Museums	Peter Pan Bus Station	Caring Health Center	Main YMCA	
1										From Tower Square (50 Respondents)
2										
3										
4										
5										
6										
7										
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Yes	56/78 (72%)	71/78 91%	70/85 82%	64/78 82%	73/83 88%	69/83 83%	69/78 88%	37/85 44%	59/78 75%	
No	22/78 (28%)	7/78 9%	15/85 18%	14/78 18%	10/83 12%	14/83 17%	9/78 12%	48/85 56%	19/78 25%	

Table 2: Do you know how to get to ... (destinations)?

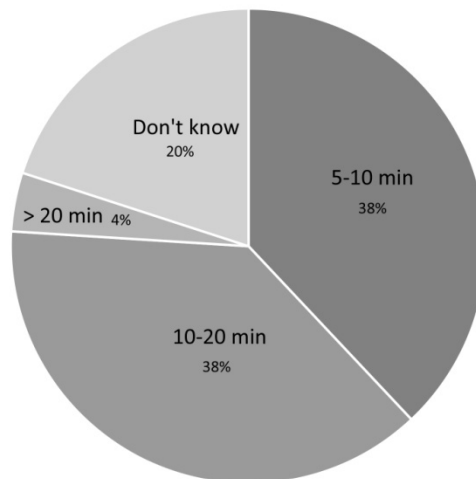
Q#3: How long does it take to walk to Riverfront Park from Tower Square?



Q#3: How long does it take to walk to Caring Health Center from Tower Square?



Q#3: How long does it take to walk to Library from Tower Square?



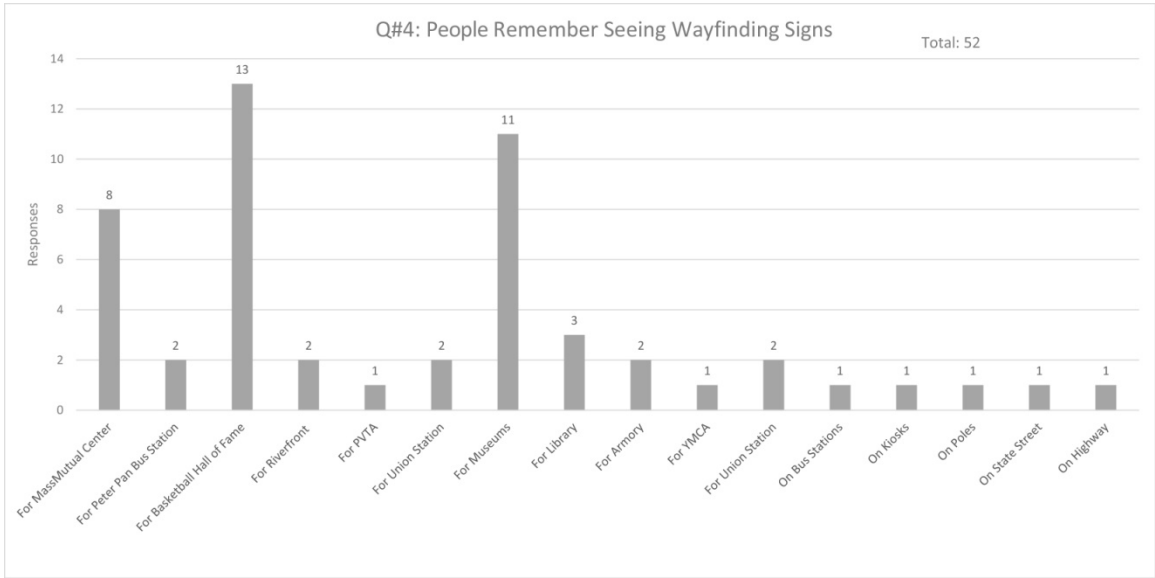


Table 4: Locations Where People Remember Seeing Wayfinding Signs

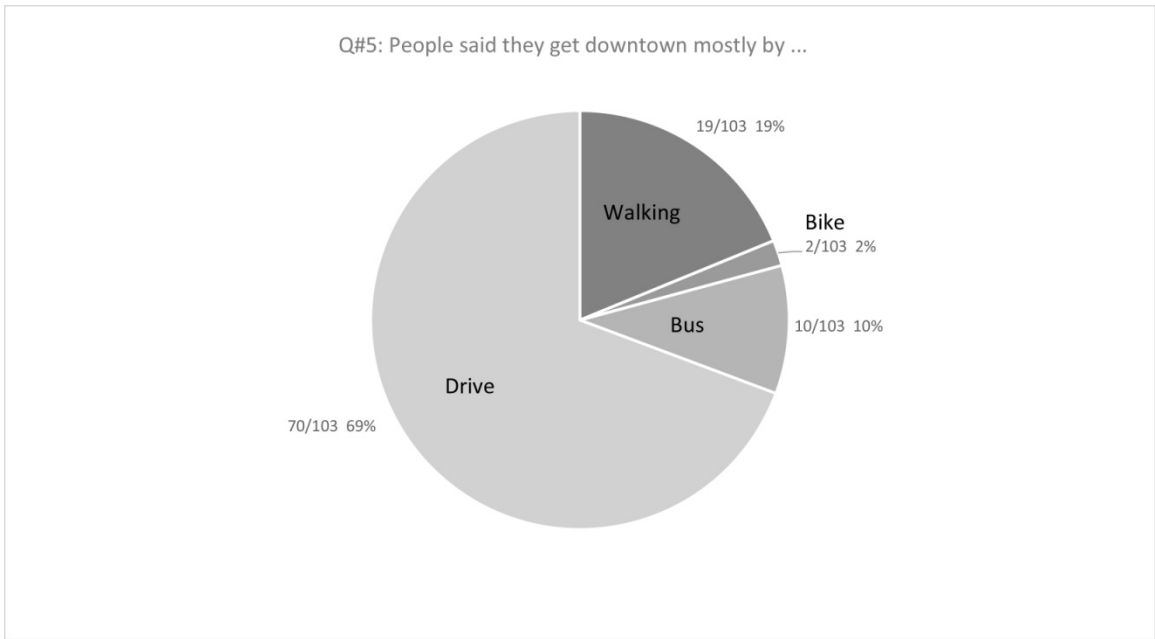


Table 5: How People Get to Downtown Springfield

Q#6: Do you ...?

People #	Live in Springfield	Work in Springfield	Own a car	Own a bike	Survey Locations
1	Yes	Yes	Yes	Yes	Tower Square (50 Respondents)
2	Yes	Yes	Yes	Yes	
3	Yes	Yes	Yes	Yes	
4	Yes	Yes	Yes	Yes	
5	Yes	Yes	Yes	Yes	
6	Yes	Yes	Yes	Yes	
7	Yes	Yes	Yes	Yes	
8	Yes	Yes	Yes	Yes	
9	Yes	Yes	Yes	Yes	
10	Yes	Yes	Yes	Yes	
11	Yes	Yes	Yes	Yes	
12	Yes	Yes	Yes	Yes	
13	Yes	Yes	Yes	Yes	
14	Yes	Yes	Yes	Yes	
15	Yes	Yes	Yes	Yes	
16	Yes	Yes	Yes	Yes	
17	Yes	Yes	Yes	Yes	
18	Yes	Yes	Yes	Yes	
19	Yes	Yes	Yes	Yes	
20	Yes	Yes	Yes	Yes	
21	Yes	Yes	Yes	Yes	
22	Yes	Yes	Yes	Yes	
23	Yes	Yes	Yes	Yes	
24	Yes	Yes	Yes	Yes	
25	Yes	Yes	Yes	Yes	
26	Yes	Yes	Yes	Yes	
27	Yes	Yes	Yes	Yes	
28	Yes	Yes	Yes	Yes	
29	Yes	Yes	Yes	Yes	
30	Yes	Yes	Yes	Yes	
31	Yes	Yes	Yes	Yes	
32	Yes	Yes	Yes	Yes	
33	Yes	Yes	Yes	Yes	
34	Yes	Yes	Yes	Yes	
35	Yes	Yes	Yes	Yes	
36	Yes	Yes	Yes	Yes	
37	Yes	Yes	Yes	Yes	
38	Yes	Yes	Yes	Yes	
39	Yes	Yes	Yes	Yes	
40	Yes	Yes	Yes	Yes	
41	Yes	Yes	Yes	Yes	
42	Yes	Yes	Yes	Yes	
43	Yes	Yes	Yes	Yes	
44	Yes	Yes	Yes	Yes	
45	Yes	Yes	Yes	Yes	
46	Yes	Yes	Yes	Yes	
47	Yes	Yes	Yes	Yes	
48	Yes	Yes	Yes	Yes	
49	Yes	Yes	Yes	Yes	
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51	Yes	Yes	Yes	Yes	
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70	Yes	Yes	Yes	Yes	
71	Yes	Yes	Yes	Yes	
72	Yes	Yes	Yes	Yes	
73	Yes	Yes	Yes	Yes	
74	Yes	Yes	Yes	Yes	
75	Yes	Yes	Yes	Yes	
76	Yes	Yes	Yes	Yes	
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80	Yes	Yes	Yes	Yes	
81	Yes	Yes	Yes	Yes	
82	Yes	Yes	Yes	Yes	
83	Yes	Yes	Yes	Yes	
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86	Yes	Yes	Yes	Yes	
87	Yes	Yes	Yes	Yes	
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89	Yes	Yes	Yes	Yes	
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91	Yes	Yes	Yes	Yes	
92	Yes	Yes	Yes	Yes	
93	Yes	Yes	Yes	Yes	
94	Yes	Yes	Yes	Yes	
95	Yes	Yes	Yes	Yes	
96	Yes	Yes	Yes	Yes	
97	Yes	Yes	Yes	Yes	
98	Yes	Yes	Yes	Yes	
99	Yes	Yes	Yes	Yes	
100	Yes	Yes	Yes	Yes	
101	Yes	Yes	Yes	Yes	
102	Yes	Yes	Yes	Yes	
103	Yes	Yes	Yes	Yes	

Yes	56/103 (54%)	52/103 (50%)	77/103 (75%)	50/103 (49%)
No	47/103 (46%)	51/103 (50%)	26/103 (25%)	53/103 (51%)

Table 6: Interviewee Information

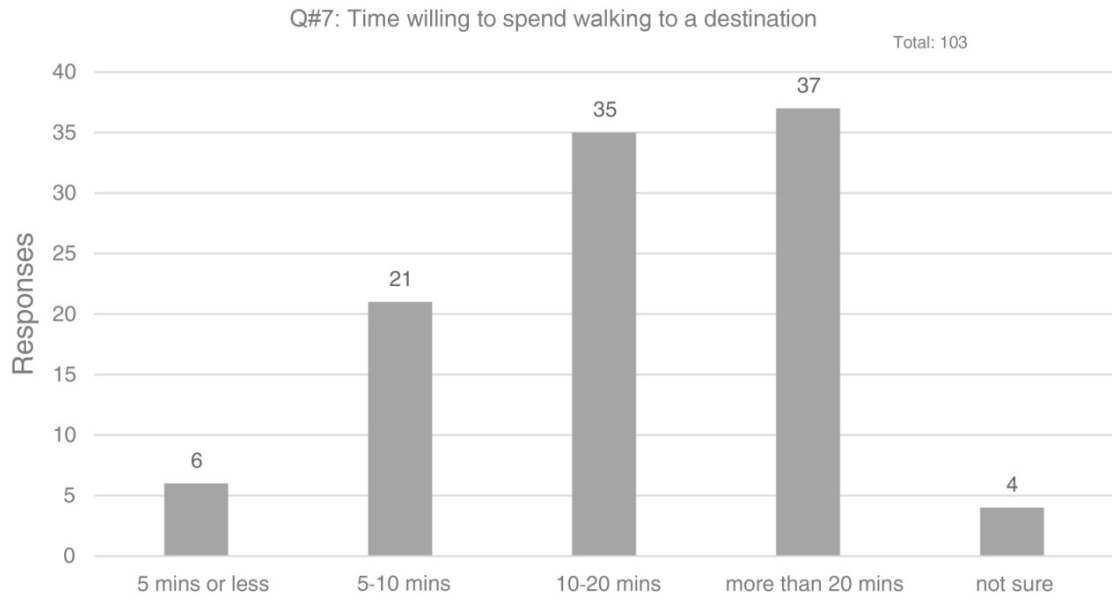


Table 7: Time People willing to spend walking to a Destination

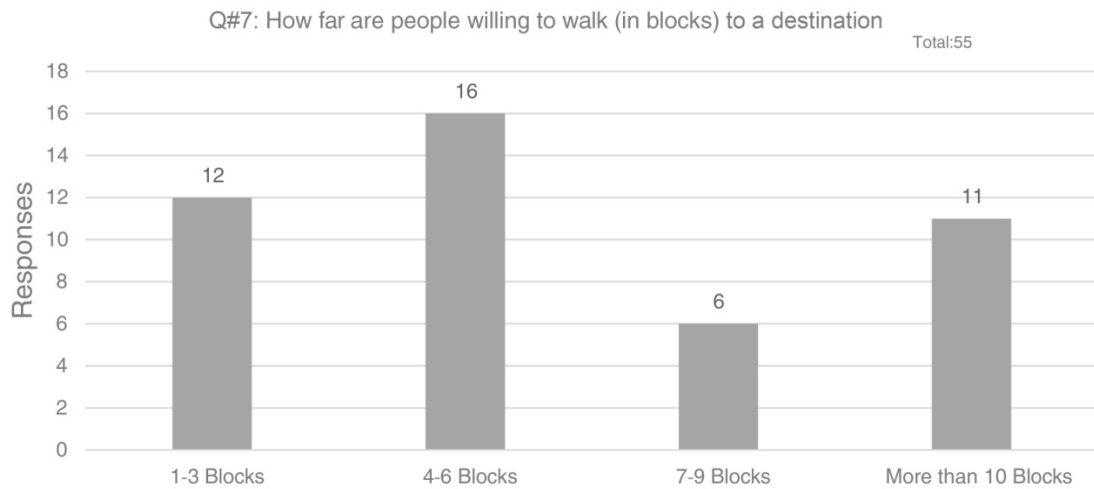


Table 8: Distance (in Block) People willing to walk to a Destination

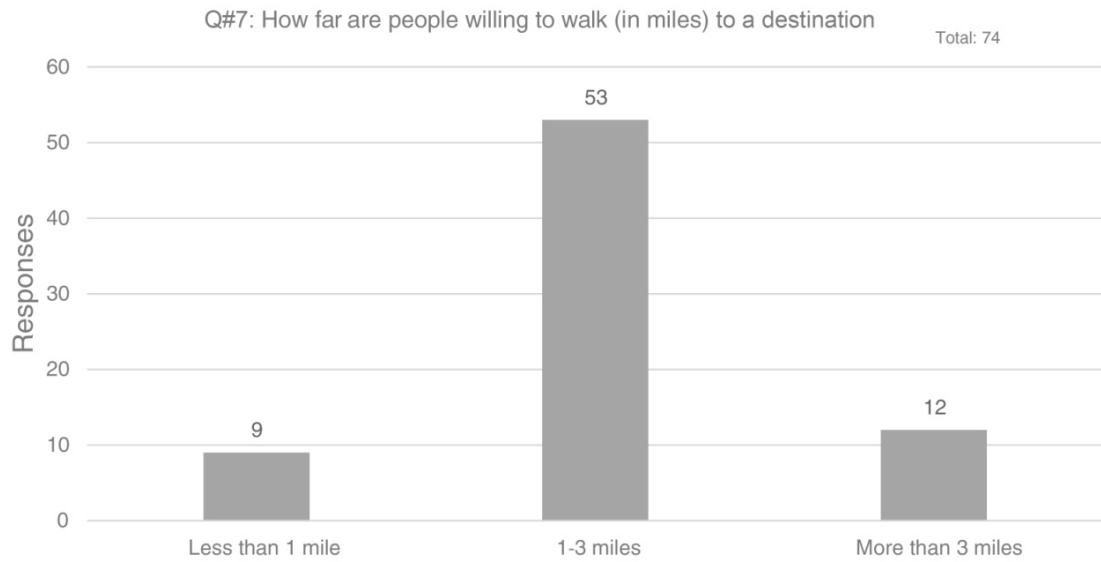


Table 9: Distance (in Miles) People willing to walk to a Destination

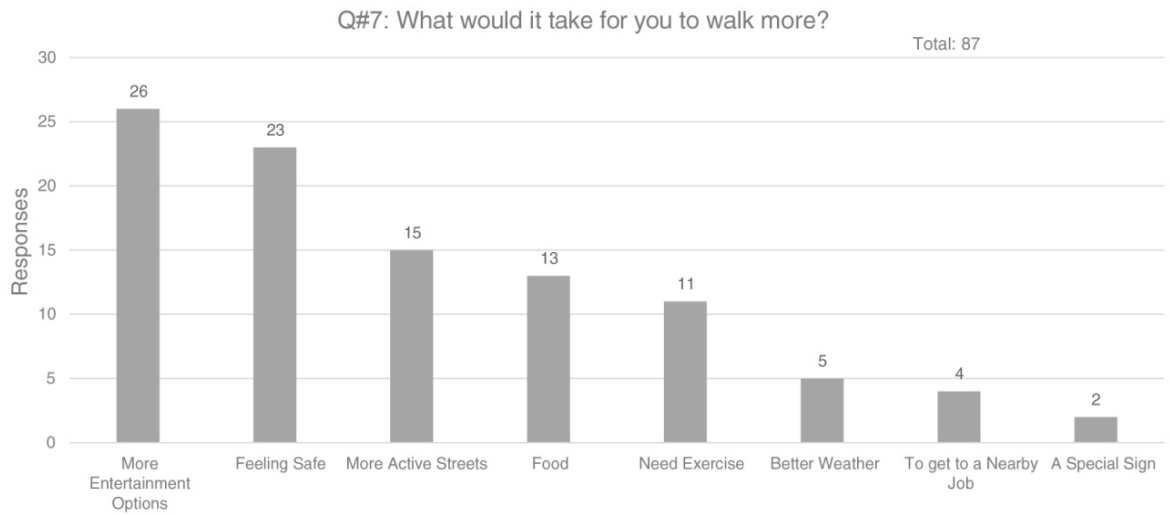


Table 10: Features that Encourage Walking

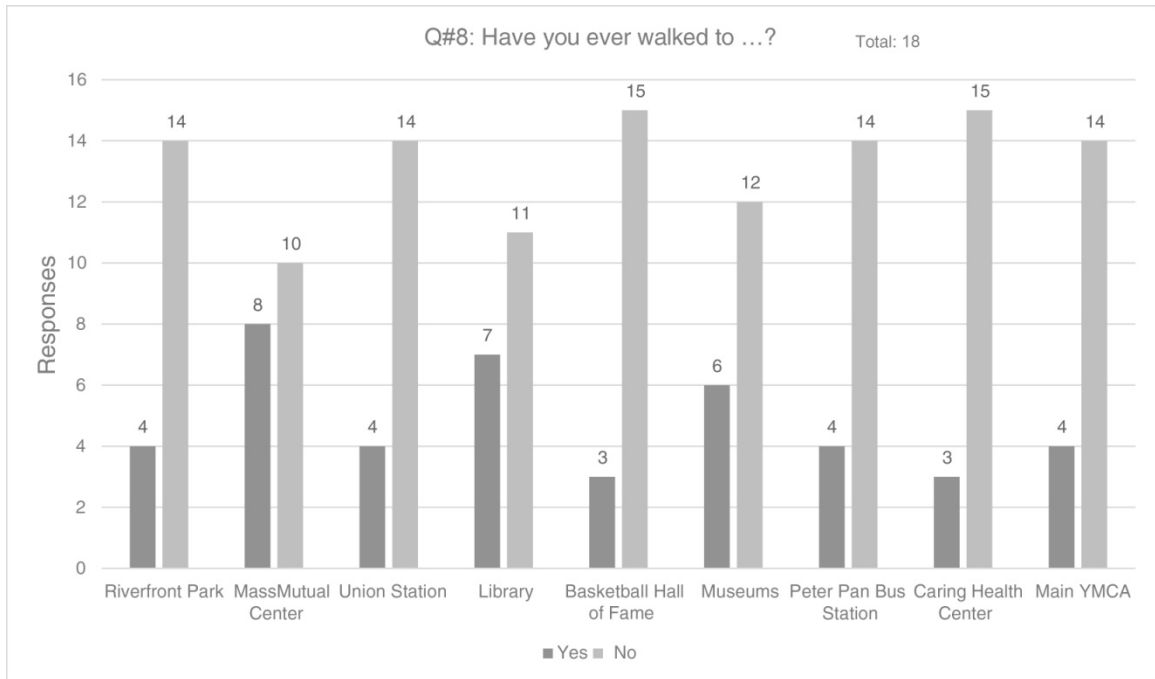


Table 11: Have you ever walked to ... (destinations)?

Data Analysis

According to the answers from participants, the following data can be summed up:

Do respondents live in Springfield?

Half of respondents (54%) live in Springfield.

Do respondents work in downtown Springfield?

Half of respondents (50%) work in downtown Springfield.

Do respondents own a car?

Seventy-five percent of respondents own a car.

Do respondents own a bike?

Half of respondents own a bicycle.

Do respondents visit selected downtown locations?

Respondents tend to visit major cultural destinations, but seem much less likely to visit non-profit/community service organizations.

In the last year,

- Over 60% of respondents had been to the MassMutual Center.
- Over 50% had been to the main library, museums, and Peter Pan Bus station.
- Just over 40% of respondents had been to the Basketball Hall of Fame in the last year.
- 25% of respondents had been to Riverfront Park and Union Station in the past year.
- Only 20% of respondents had been to Caring Health Center or the YMCA in the past year.

Do respondents know how to walk to selected downtown locations?

Yes. Even though respondents had not been to some locations within the last year, they still know how to walk to them. The exception is Caring Health Center. Most respondents have not been there and don't know how to walk there. Also, the survey suggests that even for respondents that had been there, some do not know how to walk there.

Generally speaking, do respondents walk to selected destinations?

Not many. Even though a majority of respondents could tell us how to walk to the selected destinations, our impression is that few people actually walk to them. Furthermore, fewer than 20% of respondents said that they get to downtown by foot on a regular basis. Almost 70% of respondents said they “mostly drive” to get downtown.

When we asked people visiting the Quadrangle if they walked from there to other nearby destinations, more than 2/3 said they did not.

How do respondents perceive walking distance (in blocks or miles) to selected locations?

Respondents have an accurate sense of walking distance to locations they are familiar with. They do not have an accurate sense of walking distance to locations they are not familiar with.

How far are respondents willing to walk (in blocks or miles) to a destination they want to get to?

Over 1/3 of people that answered the survey (36 %) said they would walk more than 20 minutes to get to a place they wanted to go.

Did respondents know how long (in minutes) it takes to walk to specific destinations?

Yes and no. Even though most people know how to walk to the destinations, some did not know how long (in minutes) it takes to walk to these destinations.

- At Tower Square:

17/50 (34%) respondents live in Springfield

39/50 (78%) work in Springfield

34/50 (68%) said they know how to walk to Riverfront Park

12/50 (24%) said they don't know how long it takes to walk to Riverfront Park

- At Museums/Quadrangle

7/17 respondents (40%) live in Springfield

4/17 (24%) work in Springfield

13/17 (76%) said they know how to walk to Riverfront Park

4/17 (24%) said they don't know how long it takes to walk to Riverfront Park

- At Classical Housing

10/10 respondents (100%) live in Springfield

5/10 (50%) work in Springfield

10/10 (100%) said they know how to walk to Riverfront Park

10/10 (100%) know how long it takes to walk to Riverfront Park

Are respondents familiar with existing wayfinding systems?

No. Fewer than half (36/83) 43% of respondents said they can remember seeing a wayfinding sign mentioning one of the selected locations. Of those that said they had seen a sign, most remembered signs related to the Basketball Hall of Fame, the Museums and MassMutual Center.

What do respondents say will encourage them to walk more?

When asked what would get them to walk in the downtown area more, many respondents mentioned “feeling safe”, and more “action” downtown. Also, “places to walk to”, “more activities”, “more things to walk to”, and “active and interesting storefronts” to improve the pedestrian experience.

What are some takeaways?

People that live and/or work downtown seem to know how to get around downtown on foot, and they know how to walk to major downtown locations. The surveys suggest that this is true whether respondents live in Springfield or not.

Yet even though the surveys suggest that respondents are familiar with walking routes, and “getting around downtown” in some instances close to 25% of respondents did not know the time it takes to get to a specific location on foot. This would suggest that the proposed pedestrian wayfinding project, with its emphasis on calling attention to “walking times” could address this situation.

Walking downtown. The surveys conducted at the Quadrangle/Museums asked respondents if they had ever walked from the Quadrangle to another downtown location. A majority of respondents said they have not walked from the Quadrangle to another downtown location. The exception was MassMutual Center. Nearly 50% of respondents said they had walked to MassMutual Center.

Why don't more people walk to destinations? Even though Springfield's downtown area is compact, and often thought of as very “walkable”, respondents gave reasons for why they tend not to walk. For many respondents, these reasons related more to a lack of activities to do and perhaps a lack of a walking “culture” downtown, a lack of urban density, and for some the perception that downtown is not safe. This situation is similar to other older American cities like Springfield. And these issues are being addressed separately in a number of ways.

Additional notes:

Visitors from outside the area.

We don't believe our survey (105 respondents) captured many (if any) out of town visitors. From the survey responses, virtually everyone surveyed, lived or worked in Springfield (Question #6). Even at the Museums/Quadrangle area, where respondents said they don't live in Springfield, and don't work there, they still could tell us how to walk from the museum to nearby destinations. Many of the respondents said they grew up in Springfield, or used to live there. They were not new to the area. The time of the year, and the weather may have impacted the number of tourists. Also, we should note that we did not survey at the Basketball Hall of Fame, where we would expect to find more people from outside the area.

Caring Health Center.

Of all the locations that were included in the survey, one location stands out as being a place that the majority of respondents (56%) do not know how to walk to. Only 19% of respondents have ever been there.

Recommendations

Recommendations and Suggestions are based on the pre-installation interview, and reactions from the city after installing 46 signs in April, 2016.

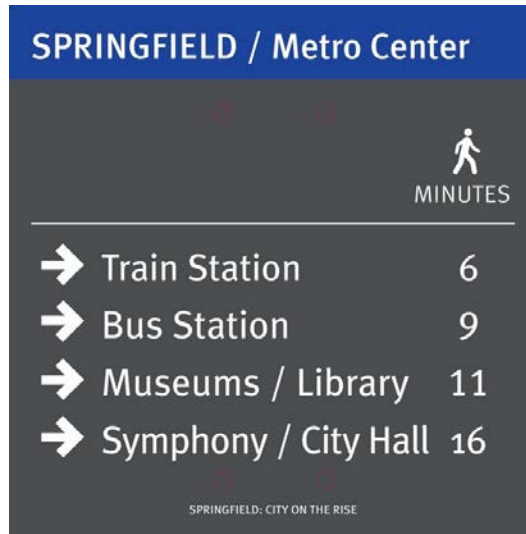


Figure 52: Springfield Wayfinding Signage

Photo: <http://media.masslive.com/republican/photo/2016/03/03/19868977-standard.jpg>

1. The size is too small to be easily noticed.

Pedestrian may not notice the 18"X18" signs.

2. The font size is too small to read.

Even if pedestrians notice the newly-installed sign, they have to be very close the sign to read them. As most of pedestrians would not do that, the idea of "to promote walking" may be of limited success.

3. Lack of unique character.

WalkBoston has done a series of wayfinding projects in Massachusetts. The graphic designer repeated the same format used by WalkBoston in most instances. Better results may occur by trying other colors. For example colors and designs reflect Springfield's culture. This could add a special quality and character that relates to Springfield (such as basketball themes, riverfront view photo, city skyline, history, etc).

It is easy to tell that the wayfinding signs recently installed in Turners Falls, MA (Figure 53) were designed by WalkBoston. And Turners Falls shows the same problems as we find in

Springfield. The signs are hard to notice. They would be more visible and successful if they had more character, and a unique, noticeable design.



Figure 53: Wayfinding Signage in Turners Falls, MA

Photo: Yanhua Lu

4. Use bilingual text.

The population of Hispanics in Springfield increased to 59,541 (US Census 2010) from 41,343 (US Census 2000) in ten years, the percentage of Springfield population increased to 39% from 27.18%. Some of the Hispanics can only understand Spanish, so it would be helpful to add Spanish on the signs.

5. Provide informational signs.

Informational signs could be provided showing districts and major points of interest, to help both local residents and visitors to get a sense of Springfield.

From case studies, temporary signs are mostly used in a relatively small area, such as community district, neighborhood, or a few streets have many pedestrians... Downtown Springfield

is a relatively large area. People need to know where they can walk to, and what activities are happening around. In that case, informational signs help explore and provide information in time.

6. Provide sponsorship from local businesses, and advertise the business on the signs.

Signs can be sponsored by local business if the project lacks budget. By doing that, budget can be increased to much more than \$60,000, and local business can be advertised and promoted.

Recommended Signage Design

According to recommendations above, several changes has been made to the directional signage (Figure 54):

- Larger font size
- Unique logo for Springfield
- Bilingual text

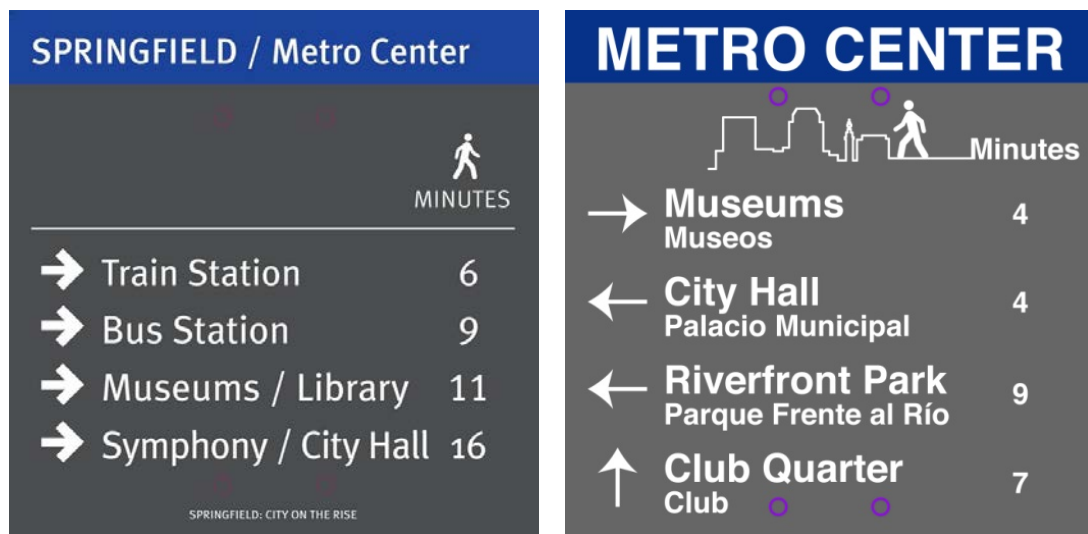


Figure 54: Before & After

New informational signage (Figure 55). One side of the signage provide overall information of points of interest in Metro Center, and the detailed map within 10 minutes walk. The other side of the signage keeps the overall information around Metro Center, and saves space for upcoming events in Springfield advertising.

METRO CENTER

YOU ARE HERE

Sponsored by Xxxxxx Xxxxxx xx Xxxx

Culture	Open Space	Entertainment	Business
<ul style="list-style-type: none"> 1 Springfield Armory 2 Springfield Museums 3 George Walter Vincent Smith Museum 4 Lyman and Merie Wood Museum 5 Springfield History 6 Springfield Science Museum 7 Dr. Seuss National Memorial Sculpture Garden 8 Michele and Donald D'Amour Museum of Fine Arts 9 The Amazing World of Dr. Seuss Museum 10 Springfield City Library 11 Christ Church Cathedral 12 First Church of Christ Congregational Church 13 Pan African Historical Museum 14 Springfield City Hall 15 Symphony Hall 16 Campanile Clock Tower 17 City Stage 18 Basketball Hall of Fame 	<ul style="list-style-type: none"> 19 Armory Square 20 Merrick Park 21 Pynchon Plaza 22 Center Square 23 Stearns Square 24 Court Square 25 Tower Square Park 26 Connecticut Riverfront park 27 Memorial Square District 28 Emily Bill Park 29 Union Station 30 Peter Pan Bus Station 31 Bus Stops 32 Interstate 91 33 Springfield Marriott Hotel 34 Sheraton Springfield Monarch Place Hotel 35 Hilton Garden Inn Springfield 36 Hampton Inn & Suites 37 Holiday Inn Express 	<ul style="list-style-type: none"> 38 Casino (MGM Springfield) 39 Springfield Club Quarter 40 Theodore's BBQ 41 Oz Night Club 42 Shearns Square 43 Court Square 44 Tower Square Park 45 Connecticut Riverfront park 46 Memorial Square District 47 Emily Bill Park 48 Community Music School of Springfield 49 Springfield Symphony Hall 50 MassMutual Center 51 Rascal's Comedy Club 52 City Stage 53 Make-It Springfield 	<ul style="list-style-type: none"> 54 MassMutual 55 Meriam-Webster 56 Monarch Place 57 Baystate Health 58 Health New England 59 American Hockey League 60 TD Banknorth 61 Hampton Bank 62 Nuvvo Bank 63 People's United Bank 64 United Personnel

METRO CENTER

YOU ARE HERE

Sponsored by Xxxxxx Xxxxxx xx Xxxx

Culture	Open Space	Entertainment	Business
<ul style="list-style-type: none"> 1 Springfield Armory 2 Springfield Museums 3 George Walter Vincent Smith Museum 4 Lyman and Merie Wood Museum 5 Springfield History 6 Springfield Science Museum 7 Dr. Seuss National Memorial Sculpture Garden 8 Michele and Donald D'Amour Museum of Fine Arts 9 The Amazing World of Dr. Seuss Museum 10 Springfield City Library 11 Christ Church Cathedral 12 First Church of Christ Congregational Church 13 Pan African Historical Museum 14 Springfield City Hall 15 Symphony Hall 16 Campanile Clock Tower 17 City Stage 18 Basketball Hall of Fame 	<ul style="list-style-type: none"> 19 Armory Square 20 Merrick Park 21 Pynchon Plaza 22 Center Square 23 Stearns Square 24 Court Square 25 Tower Square Park 26 Connecticut Riverfront park 27 Memorial Square District 28 Emily Bill Park 29 Union Station 30 Peter Pan Bus Station 31 Bus Stops 32 Interstate 91 33 Springfield Marriott Hotel 34 Sheraton Springfield Monarch Place Hotel 35 Hilton Garden Inn Springfield 36 Hampton Inn & Suites 37 Holiday Inn Express 	<ul style="list-style-type: none"> 38 Casino (MGM Springfield) 39 Springfield Club Quarter 40 Theodore's BBQ 41 Oz Night Club 42 Shearns Square 43 Court Square 44 Tower Square Park 45 Connecticut Riverfront park 46 Memorial Square District 47 Emily Bill Park 48 Community Music School of Springfield 49 Springfield Symphony Hall 50 MassMutual Center 51 Rascal's Comedy Club 52 City Stage 53 Make-It Springfield 	<ul style="list-style-type: none"> 54 MassMutual 55 Meriam-Webster 56 Monarch Place 57 Baystate Health 58 Health New England 59 American Hockey League 60 TD Banknorth 61 Hampton Bank 62 Nuvvo Bank 63 People's United Bank 64 United Personnel

Advertise

Sponsored by Xxxxxx Xxxxxx xx Xxxx

Figure 55: Two Sides of Informational Sign

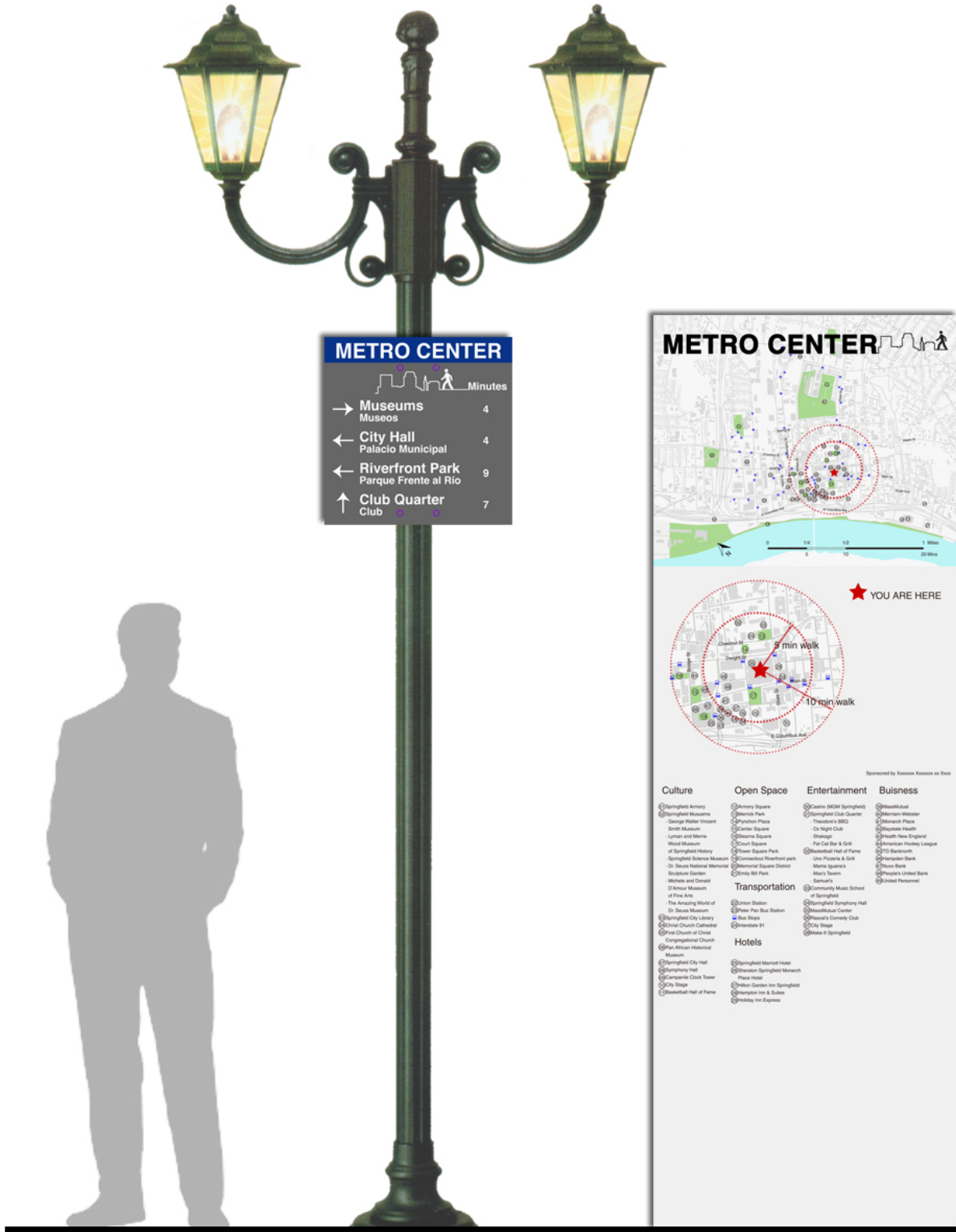


Figure 56: Conceptual Wayfinding Sign Family

Graphic Specifications

TEXT

ABCDEFGHIJKLMN**OP**QRSTUVWXYZ

abcdefghijklmnopqrstuvwxy**z**

1234567890&.,;'"?#*\$

Helvetica Bold
(Directional Sign & Informational Sign Title)

ABCDEFGHIJKLMN**OP**QRSTUVWXYZ

abcdefghijklmnopqrstuvwxy**z**

1234567890&.,;'"?#*\$

Helvetica Medium
(Informational Sign Text Body)

COLOR SPECIFICATIONS

Color Code

MATTE GREY	R 102 G 102 B 102	
MATTE BLUE	R 12 G 51 B 136	
MATTE LIGHT GREY	R 204 G 204 B 204	
OPEN SPACE	R 162 G 215 B 132	
CONNECTICUT RIVER	R 153 G 204 B 255	
CURRENT LOCATION	R 204 G 0 B 0	

SYMBOLS



Bus Stop



Logo



Directional Arrow

Figure 57: Graphic Specifications

Notes

¹ Foster, Paul N., Stefanie M. Santaniello, Justine Calcina, Delania Barbee, and Kinshasa Fowlkes. "A Demographic and Economic Analysis Of the City of Springfield." *City of Springfield, Massachusetts*. Pioneer Valley Planning Commission, Sept. 2006. Web. Retrieved 17 Aug. 2016.
<https://www.springfield-ma.gov/planning/fileadmin/Planning_files/Springfield_Market_Study_2006.pdf&sa=U&ved=0ahUKEwi5qJCvzO7PAhWKOD4KHQwyC3gQFggLMAM&client=internal-uds-cse&usg=AFQjCNGivrOBdCDw2NqI36i-s0FACs2NNA>.

² Bloniarz, David. "Springfield Neighborhoods Report: ReGreen Springfield." *Encyclopedic Dictionary of Landscape and Urban Planning* (2010): 1053.

³ Inthasorn, Piyawut. "Landscape Urbanism for the Highway City of Springfield North End." ScholarWorks@UMass Amherst. UMass Amherst, 14 May 2010. Web. Retrieved 18 Aug. 2016.
<http://scholarworks.umass.edu/cgi/viewcontent.cgi?article=1000&context=larp_honors&sei-redir=1#search=>>.

⁴ Springfield BID. "Downtown/Metro Center Pedestrian Wayfinding Enhancement Initiative." *Bid Detail 16-140 - RFP*. City of Springfield, Massachusetts, 10 Mar. 2016. Web. Retrieved 20 Aug. 2016.
<http://www.springfield-ma.gov/finance/procurement/bid_detail.php?bid=201616-140>.

CHAPTER 6

GUIDELINES: A WAYFINDING TOOLKIT FOR CITIES AND TOWNS

As this project has tried to show, wayfinding systems have become especially popular in recent years. Examples can be found around the globe, with many more coming. The proliferation of so many projects means that cities and towns contemplating wayfinding systems have almost unlimited resources and examples to look at for help. Yet, the work in this project is perhaps unique in that it is based on the author's direct experience on an actual wayfinding project, augmented by considerable research, including case studies and "lessons learned" The work is summarized in the following chapter as a "Toolkit" that provides important and convenient recommendations for wayfinding projects.

Who should use this toolkit?

In recent years, wayfinding systems have been implemented in cities and towns, large and small. A major goal of most projects is to make navigation easier for pedestrians, motorists, and cyclists. Wayfinding systems help reinforce key destinations, and enhance the "image", "brand", or what urban designers call "a sense of place". However, city leaders are left to consider developing wayfinding programs, often on limited budgets with little knowledge about lessons learned from other cities and towns, or clear directions for how to proceed.

The "Toolkit" presented in this chapter should be used by citizens and civic leaders in cities and towns interested in developing a wayfinding program. It is the hope that individual cities and towns will be able to use this toolkit as a way to build support in their own community so that they can implement a successful wayfinding program.

Do you really need a wayfinding signage system?

It seems almost every city and town is developing a new wayfinding system. Wayfinding systems often require much time and money to implement. Before you begin, it is important to confirm that your community needs a wayfinding system.

The goal of a wayfinding signage system above all is making the a specific “project area” effectively navigable. The criteria of navigability include a person’s current location and orientation; the ability to successfully perform wayfinding tasks; and how well pedestrians can accumulate wayfinding orientation in space.

It is important to remember that wayfinding is much more than a signage system. Kevin Lynch explains the importance of “imageability” or the ability of a navigator to form a coherent image or map of his or her surroundings. Lynch says that people usually organize the image they have for a city by using a set of common features: paths, landmarks, districts, edges (barriers), and nodes (intersections). In other words, these important features can help direct people, and in some cases can even negate the need for a formal wayfinding system. In fact, a specially designed signage system is not always beneficial, especially in places that already have sufficient existing signs or landmarks. Time and money can be saved by carefully assessing the city or town’s needs, including goals and objectives. This should be done in a beginning phase of the project as part of a pre-installation evaluation/survey in the target area.

Funding for Wayfinding System

In general, the costs for a wayfinding system usually include four main areas: planning, design, fabrication and installation, followed by costs associated with any repairs and ongoing maintenance/management required for the system.

Planning

The cost of initial planning includes a vision statement, design brief, planning scope, and system conceptual design. These costs are range from \$10,000 - \$50,000 depending on the size and complexity of the project.

Design

The cost of design includes design development, approvals, documentation and bidding. These cost are generally from \$35,000 - \$500,000.

Sample design budgets include:

- Neighborhoods and Main Streets \$35,000 - \$75,000;
- Small Town \$75,000 - \$100,000;
- Small Downtown or Mid Sized City \$100,000 - \$150,000;
- Large Downtown \$125,000 - \$300,000;
- Entire Cities and Regional Areas \$125,000- \$500,000.

Fabrication and Installation

The cost of drawings, fabrication and installation could range from \$100,000 - \$5,000,000.

Sample fabrication budgets include:

- Neighborhood and Main Streets \$75,000 - \$150,000;
- Small Town \$200,000 - \$350,000;
- Small Downtown or Mid Sized City \$ 350,000 - \$750,000;
- Large Downtown \$ 750,000 - \$1.5 million;
- Entire Cities and Regional Areas \$1.5 million - \$3 million+.

Ongoing Maintenance/Management

The cost of cleaning, replacing and expanding the system various. It is financed through several approaches including destination fees, business levies and internal budgeting.

The costs of a wayfinding program are usually paid by grants, taxpayer funds or a public/private collaboration. The top five leading financing sources for wayfinding programs are: Transportation Equity Act (TEA-LU), City Capital budget for Economic Development, Community Development Block Grants, and Institutional and Corporate Grants.

Projects include special landmarks, gateways, streetscapes could cost more. The size of signs and types affect price greatly.

Lessons Learned

Based on the previous case studies, several principles have been identified below that can be applied to wayfinding systems:

- Design standards should address all types of users, including local residents, visitors, able-bodied or not, appropriate for a diverse population.
- Each sign should provide adequate information, either too much or too little can be confusing.
- Signage should be easy to recognize and read. They should be positioned consistently so that people can find each type of information easily.
- Signage should be in a uniform, modular frame that allows quick changes and withstand frequent cleaning.
- Types of signage could be determined by size of target area, main goal of the project, zoning of the target area, and so on. Map kiosks are recommended especially the target area is large with multiple districts.
- Temporary signage has become a trend in recent years, because of lower cost, easy to change and maintain, and short period for conduction.

Things to watch out for building a Wayfinding System

1. Wayfinding signs should be designed easily to be updated and maintained.
2. Information should be presented consistently and logically.
3. Wayfinding signs should be designed to address the appropriate audience.

Recent Trends in Wayfinding

In 1960, Lynch coined the term of wayfinding and defined it as "the elements of the built environment that allow us to navigate successfully through complex spaces like cities and towns". Wayfinding includes four elements: orientations, route decisions, mental map, and destinations. These four core components might not change, however, the resources and structures building an effective wayfinding system has been changing.

Technology development is just one of the new developments to impact the design of wayfinding systems. Others include:

- Option to have hand-held map and translation service for any language;
- Option to provide service for people with visual disability, hearing loss...;
- A wayfinding system that is easy to be updated and maintain.

Top 10 Recommendations

1. Start with pre-survey or low-cost tactical installation.

Pre-survey and evaluation is recommended when start planning wayfinding system, in order to know if new wayfinding system is needed for residents and visitors. From the pre-survey in Springfield, it is easy to know that lack of place to go in Metro Center is the major reason why residents do not walk much. In addition, there are a large number of existing wayfinding signs in Metro Center, which is distracting.

Planners and communities can have a reference from the survey and evaluation, and decide to build a new wayfinding system, to improve existing wayfinding signs, or use the budget to create activities for residents.

2. Communicate with all related stakeholders.

Bring together all stakeholders who will be affected by the completed wayfinding design. There is always a conflict of interest among different parties and organizations as wayfinding helps brand the city.

3. Keep information simple.

Too much information is overwhelming. Successful wayfinding systems present information that is easy to understand. Display information in a logical way and use graphics and symbols that are universally understood.

4. Existing signs may cause conflict with new ones.

Too much information is confusing, as well as multiple styles of signs. Most of the cities and towns have built wayfinding signs in the past. Try to incorporate new wayfinding signs with existing ones before tearing them down. And try to uniform existing and new signs.

5. Directional signs with walking distance and time spend serve a limited range of area.

Comparing to traditional directional signs, signage with walking distance and time spend (Figure 58) is more perceptual intuition by indicating how close and convenient to get to a destination by WALKING, especially for those who do not have an accurate sense of distance and how long it takes them to walk for a certain distance.

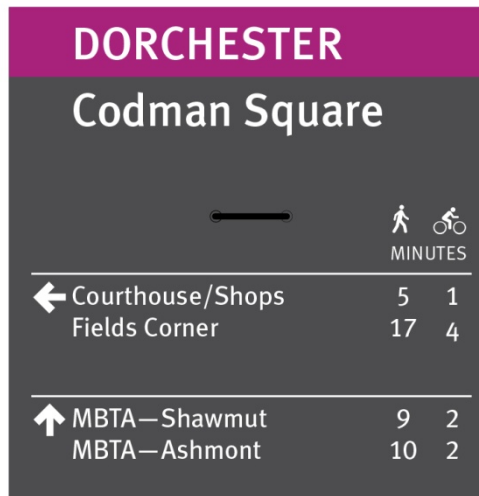


Figure 58: Dorchester Temporary Wayfinding Signage

Photo: <http://walkboston.org/sites/default/files/WalkBoston%20-%20Low%20Cost%20Pedestrian%20Improvements.pdf>

Directional signs with time and distance are better to be used in small-scale area, such as community, neighborhood, and main streets in downtown area, if it is the only type of sign that was planned. Because this kind of sign can only serve a limited range of area.

According to the interview taken in Springfield, 60% of interviewers can WALK to a destination within 20 minutes, 80% of the interviewers can WALK for less than 10 blocks, which is about 1-1/4 miles. Therefore, destinations shown on signs should not be further than 1 mile/20mins walk. If not, people are very likely to drive or take buses since they think the destination is "too far".

6. Typeface, Font Size and other graphic specifications should be legible.

Make sure the typeface is legible, such as Helvetica, which was used in WalkNYC, and Futura used in Gateway and Wayfinding Program in Miami, FL.

Font size should be big enough to read.

7. Signage size should be neither too large nor too small.

Make sure the sign is noticeable, and not shield street view.

8. Signage type should be decided depend on the scale of serving area.

The simpler the signs are made, the more efficient they will be. Information on signage should be neither too much nor too little. Before developing the wayfinding system, the particular characteristics of the systems are needed to know in order to help make the right choice of which type to use. For example, based on the scale of downtown Philadelphia and Manhattan, overall maps were provided to give an overview for pedestrians, while only directional signs were applied in Dorchester and Raleigh.

9. Thinking about wayfinding program at the time when planning a street or space, rather than after the community has been built.

10. Provide signs at decision points.

Install signs at the most effective locations, where pedestrians must make a decision which way to go.

References to Data and List of Case Studies/Links to Websites

Case studies include wayfinding program in cities and towns listed below.

<http://americawalks.org/>

<https://segd.org/what-wayfinding>

<http://idea.ap.buffalo.edu/udny/Section4-1c.htm>

- Charlotte, NC: Uptown Charlotte Wayfinding System

Charlotte has similar geographic location and area with Springfield, MA, and similar developing background as well. It would be worth learning about the density of signs, locations of signs, and other details in Charlotte.

<https://segd.org/charlotte-wayfinding-system>

<http://www.twotwelve.com/wayfinding-systems/city-of-charlotte.html>

- Philadelphia, PA: Walk!Philadelphia

This program has been widely recognized as one of the most successful wayfinding program in United States. It has been used as case study for wayfinding system program in many cities and towns.

<http://www.lhsigns.com/urban-wayfinding-signage.html>

<http://www.restreets.org/case-studies/comprehensive-hierarchical-wayfinding>

<http://planphilly.com/articles/2014/09/29/not-all-those-who-wander-are-lost-but-most-are-a-wayfinding-tour-of-city-hall>

- Portland, OR: Portland Pedestrian Wayfinding Signage System

This program has been recognized as a successful wayfinding system, and has been studied by an amount of cities and towns. The designer Joel Katz Design Associates (JKDA) is responsible for the success of Walk!Philadelphia as well.

<https://www.walkscore.com/score/portland-oregon>

<https://www.portlandoregon.gov/transportation/40500>

- Springfield, OR: Springfield Wayfinding System

The city of Springfield studied about the existing logic of the city, and came up with a logic map which was used on map kiosk in the wayfinding program. In addition, public arts and murals incorporated with wayfinding in this program, which can promote public participation.

<http://www.ci.springfield.or.us/SCYWayfinding.htm>

<http://cargocollective.com/shannonpaine/Springfield-Wayfinding-Proposal>

<https://scholarsbank.uoregon.edu/xmlui/handle/1794/13515>

- Portland, Maine: Portland Wayfinding System

Portland, ME and Springfield, MA has similar population density, and located at waterfront, which leads to a same problem: how to guide people to waterfront, and make full use of the waterfront view.

<http://www.portlandmaine.gov/DocumentCenter/Home/View/2214>

- New York City, NY: WalkNYC

WalkNYC serves 8.5 million residents and 50 million yearly visitors to navigate the city streets. It provided a clear visual language and graphic standard that is universally understood.

<http://www.nyc.gov/html/dot/html/pedestrians/walknyc.shtml>

<https://www.dwell.com/collection/how-new-york-city-developed-its-wayfinding-signage-812a8ae3>

<http://www.designboom.com/design/walknyc-pedestrian-maps-by-the-pentacitygroup/>

<http://www.aiga.org/case-study-walknyc-pedestrian-wayfinding/>

- Raleigh, NC: Walk Raleigh

WalkRaleigh is an award-winning project conducted by a student team from North Carolina State University. After winning the 2012 ASLA Student Award, the project has raised a revolution of temporary wayfinding signage.

<https://www.asla.org/2012studentawards/255.html>

<http://www.citylab.com/tech/2012/02/guerilla-wayfinding-raleigh/1139/>

<http://www.citylab.com/design/2015/02/diy-wayfinding-signs-are-about-to-go-mainstream/386081/>

- Dorchester Community, Boston, MA: WalkBoston

WalkBoston is an organization dedicated to promote walking for transportation and recreation in Massachusetts. It has sponsored wayfinding projects in many cities and towns in Massachusetts, such as Dorchester Community and Turners Falls. It is one of the sponsorships in Springfield wayfinding program as well.

<https://www.boston.gov/neighborhood/dorchester>

<http://walkboston.org/what-we-do/being-advocate>

- Ottawa-Vanier, Canada: Walk Vanier

Walk Vanier is a project launched by local residents, in order to support small scale community and activate neighborhood.

<http://vaniernow.blogspot.com/2014/02/making-way-for-new-signs.html>

- Metro Center, Springfield, MA: Springfield Pedestrian Wayfinding System

103 random-selected pedestrian were interviewed in Springfield, MA. Detailed survey see Appendix B.

<http://www.pvpc.org/content/city-springfield-pedestrian-wayfinding>

<https://www.springfield-ma.gov/cos/index.php?id=2029>

http://www.masslive.com/news/index.ssf/2016/04/walkable_springfield_city_unve.h

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APPENDIX A

SUMMERIZATION OF CASE STUDIES

	Charlotte, NC	Philadelphia, PA	Portland, OR	Springfield, OR	Portland, Maine	NYC, NY	Raleigh, NC	Dorchester, MA	Vanier, Ottawa, Canada	Springfield, MA
Built Time	2007	1988-2013	2003	2012	2008	2013	2012	2014	2014	2016
Area	297.7 sq mi	141.6 sq mi	145 sq mi	15.75 sq mi	69.44 sq mi	468.9 sq mi	144.8 sq mi	6 sq mi	1.13 sq mi	33.2 sq mi
Population	809,958	1,567,442	583,776	59,403	66,194	8,550,405	451,066	91,982	16,258	153,060
Density	2720.7/sq mi	11,635.3/ sq mi	4,375/sq mi	3,774/ sq mi	3,107.2/ sq mi	28,052.5/sq mi	3158.7/ sq mi	15,330/sq mi	14,387/sq mi	4768.2/ sq mi
Geographic Location	South bound of North Carolina; I-85, I-77, and I-485 through the city; I-277 loop encircles uptown	East bound of Pennsylvania; Northeast bank of Delaware River; I-76, I-676, and I-95 lying at edge of downtown	Northwest bound of Oregon; Southwest bank of Columbia River	West of Oregon; Northeast bank of Willamette River; Southwest bank of McKenzie River; I-405 through downtown	Southeast bound of Maine; West bank of North Atlantic Ocean; I-95/295 through downtown area	South corner of New York State; Divided into several peninsulas and islands by River	Capital of the state of North Carolina; I-440 and I-40 loop encircle the city	West bank of North Atlantic Ocean; I-93 through the area; Franklin Park on the south part	East bank of the Rideau River	Eastern bank of Connecticut River; I-91 lying on the riverfront
Signage Location	Uptown Charlotte	Central City District	Downtown district, Lloyd District, Pearl District, Old Town/Chinatown District, and University District	Downtown Springfield	Old Port District, Waterfront District, Art District, and Government District	Uptown and Downtown Manhattan	Three Streets in Downtown Raleigh	Dorchester Avenue	Vanier Neighborhood	Downtown/Metro Center
Pedestrian Signage Types	Two types. On-street signs & map kiosks.	Two types. Pedestrian directional & Diskmap.	One type. Two faces, one with system map, the other with district map and direction	Two types. Self-standing color-coded parcels with walking distance; map kiosks.	Two types. Directional signs & map kiosks.	One type. Directional information & maps in one.	One type. Attached to poles.	One type. 18 x 18 inch.	One type. Attached to poles.	One type. Attached to poles.
Temporary/Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent	Temporary	Temporary	Temporary	Temporary
Quantity of Current Pedestrian Signs	49 on-street signs; 14 map kiosks.	425 directional signs; 258 diskmaps.	102	121	29 directional signs.	/	27	/	30	46 at present
Cost		\$683,000					\$275	\$25 each		\$60,000 funding

APPENDIX B

QUESTIONARE OF INTERVIEW IN SPRINGFIELD

DowntownSpringfield

Pedestrian Wayfinding Pre-Installation Survey

Location of Survey: _____ Date: _____

Do you have 3 minutes to answer a few anonymous questions? Your answers will help us understand how people move around the downtown area so we can better support pedestrians.

1. In the LAST YEAR.....Have you been to:

- Riverfront Park yes no
- MassMutual Center yes no
- Union Station yes no
- Library yes no
- Basketball Hall of Fame yes no
- Museums yes no
- Peter Pan Bus Station yes no
- Caring Health Center yes no
- Main YMCA yes no

2. Can you tell me how to WALK to?

- Riverfront Park yes no
- MassMutual Center yes no
- Union Station yes no
- Library yes no
- Basketball Hall of Fame yes no
- Museums yes no
- Caring Health Center yes no
- Peter Pan Bus Station yes no
- Main YMCA yes no

Have you ever walked to?

- Riverfront Park yes no
- MassMutual Center yes no
- Union Station yes no
- Library yes no
- Basketball Hall of Fame yes no
- Museums yes no
- Caring Health Center yes no
- Peter Pan Bus Station yes no
- Main YMCA yes no

3. How long do you think it takes to walk to?

- Riverfront Park 5-10 Minutes 10-20 Minute More than 20 minutes Don't know
- MassMutual Center 5-10 Minutes 10-20 Minute More than 20 minutes Don't know
- Union Station 5-10 Minutes 10-20 Minute More than 20 minutes Don't know
- Library 5-10 Minutes 10-20 Minute More than 20 minutes Don't know
- Basketball Hall of Fame 5-10 Minutes 10-20 Minute More than 20 minutes Don't know
- Museums 5-10 Minutes 10-20 Minute More than 20 minutes Don't know
- Peter Pan Bus Station 5-10 Minutes 10-20 Minute More than 20 minutes Don't know
- Caring Health Center 5-10 Minutes 10-20 Minute More than 20 minutes Don't know
- Main YMCA 5-10 Minutes 10-20 Minute More than 20 minutes Don't know

4. Have you seen any signs that tell you how to get to any of these destinations?

yes no Which ones?

5. When you come to downtown, how often do you

Walk	<input type="checkbox"/> mostly	<input type="checkbox"/> sometimes	<input type="checkbox"/> neve
Bike	<input type="checkbox"/> mostly	<input type="checkbox"/> sometimes	<input type="checkbox"/> never
Bus	<input type="checkbox"/> mostly	<input type="checkbox"/> sometimes	<input type="checkbox"/> never
Driv	<input type="checkbox"/> mostly	<input type="checkbox"/> sometimes	<input type="checkbox"/> never

6. Do you

live in Springfield?	<input type="checkbox"/> yes	<input type="checkbox"/> no
work in downtown Springfield?	<input type="checkbox"/> yes	<input type="checkbox"/> no
own a car?	<input type="checkbox"/> yes	<input type="checkbox"/> no
own a bike?	<input type="checkbox"/> yes	<input type="checkbox"/> no

7. How many minutes would you be willing to walk to a destination?

- 5 Minutes or less
- 5-10 Minutes
- 10-20 Minutes
- More than 20 minutes
- Not sure (*please explain*): _____

8. How FAR would you be willing to walk to a destination?

_____ blocks and/or _____ miles

- Not sure (*please explain*): _____

9. What would encourage you to walk more?

Thank you!

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