

# HOW PEDESTRIAN WAYFINDING CONTRIBUTES TO THE SMART GROWTH IN LEGACY CITIES: LESSONS LEARNED FROM SPRINGFIELD, MA

## Abstract

In recent years, numbers of legacy cities have been trying to attract people, including residents and visitors, to relieve population loss, one of the most serious problems legacy cities have been facing. One popular approach is applying pedestrian wayfinding. However, the lack of data and literature on how effective pedestrian wayfinding is to reactivate a legacy city usually makes the work less efficient. This paper presents research on what difference pedestrian wayfinding can make to people and the city, through survey and data analysis before and after the installation of a pedestrian wayfinding system in downtown Springfield, MA. The research reveals that a noticeable pedestrian wayfinding system with consistent and logical information can help encourage walking, while other situations are improved, such as more places to go to, and safer streets. The study in Springfield, MA, provides a reference to other legacy cities that are interested in implementing a pedestrian wayfinding system for urban revitalization.

## Authors

Yanhua Lu and Michael DiPasquale  
*North Carolina State University,  
University of Massachusetts Amherst*

## Keywords

Legacy city, pedestrian wayfinding, urban revitalization, smart growth, walkability

## Introduction

As one of the largest post-industrial legacy cities in the northeast United States, Springfield has been looking for intelligent approaches for urban revitalization and sustainable development through the principle of smart growth, emphasizing on improving people's well-being. The city of Springfield has been focusing on creating a walkable downtown, for the purpose of a more livable city and activated streetscape.

Pedestrian wayfinding has been applied as a common tool to make the environment easier to understand and navigate, making for a better and more enjoyable experience. And an enjoyable experience may encourage people to return again, further enhancing civic life (Harrison, 2017). As pedestrian wayfinding is popular in use of legacy city revitalization, the lack of study on the effectiveness of the wayfinding system represents a serious gap between professional practice and literature (Morckel, 2017). This paper presents the research based on an initiative pedestrian wayfinding system in downtown Springfield, MA. Based on the survey and assessment of pre- and post-installation, the paper examined if pedestrian wayfinding contributes to an increasing awareness of walkability, thus promoting walking. The working progress in downtown Springfield can be served as a takeaway toolkit for other legacy cities which plan to create a pedestrian wayfinding system for urban revitalization.

In 2015, the City of Springfield together with the Massachusetts Department of Public Health began a 4-phase process for a pedestrian wayfinding signage project in downtown Springfield. A major goal of this effort was to improve public health and activate streets by encouraging people to walk more. The project was funded by a Centers for Disease Control 1422 grant.

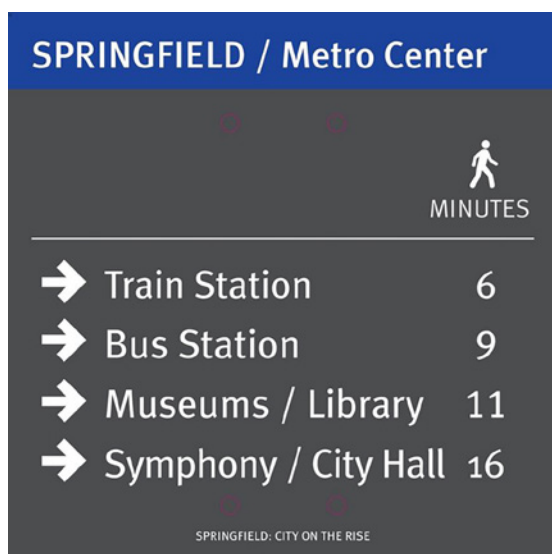


Figure 1: "Pilot" wayfinding signage for Phase 2 at Stearns Square in downtown Springfield.

The project includes four phases:

### PHASE 1: PRE-INSTALLATION SURVEY

A "pre-installation" survey was conducted in Spring 2016, prior to the pilot installation of wayfinding signage. A total of 103 survey respondents were comprised of downtown workers, visitors, and residents.

### PHASE 2: TEMPORARY SIGNAGE INITIATED BASED ON THE PRE-INSTALLATION SURVEY

The temporary, or "pilot" wayfinding system was designed to emphasize the short distances and small amount of time it takes to walk to important downtown destinations (Figure 1). The ultimate goal of the pilot installation was to understand how pedestrians think and react to the wayfinding signage. Fifty-four temporary signs designed by WalkBoston were put up in downtown Springfield in April 2016. Each of the signs showed the walking direction and time to the destinations, which were popular points of interest. Signage was installed at locations that occurred along major pedestrian routes and at prominent points where pedestrians congregated.

### PHASE 3: POST-INSTALLATION SURVEY

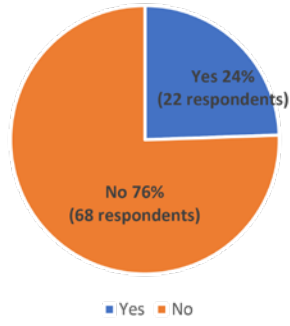
A post-installation survey was conducted 18 months after the "temporary" wayfinding signs were put in place. A total of 90 people were surveyed in downtown Springfield, including residents, workers, and visitors in Fall 2017.

### PHASE 4: PERMANENT SIGNAGE DESIGN AND INSTALLATION BASED ON THE OVERALL RESEARCH AND TACTICAL INSTALLATION (FIGURE 2)

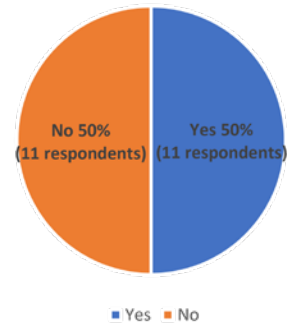


Figure 2: Permanent signage for Phase 4.

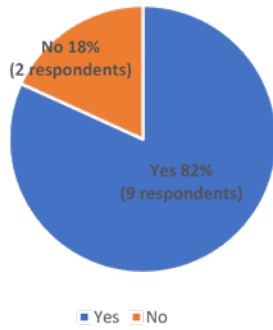
Have you noticed the signs showing walking distances and destinations? (n=90)



If you have noticed the signs, do they convey *NEW* information to you? (n=22)



Has the awareness made you walk/bike more? (n=11)



Do you think the signs are a good addition to Springfield? (n=90)

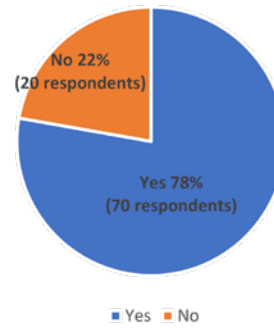


Figure 3: How respondents think of the signs.

### What would encourage you to walk more?

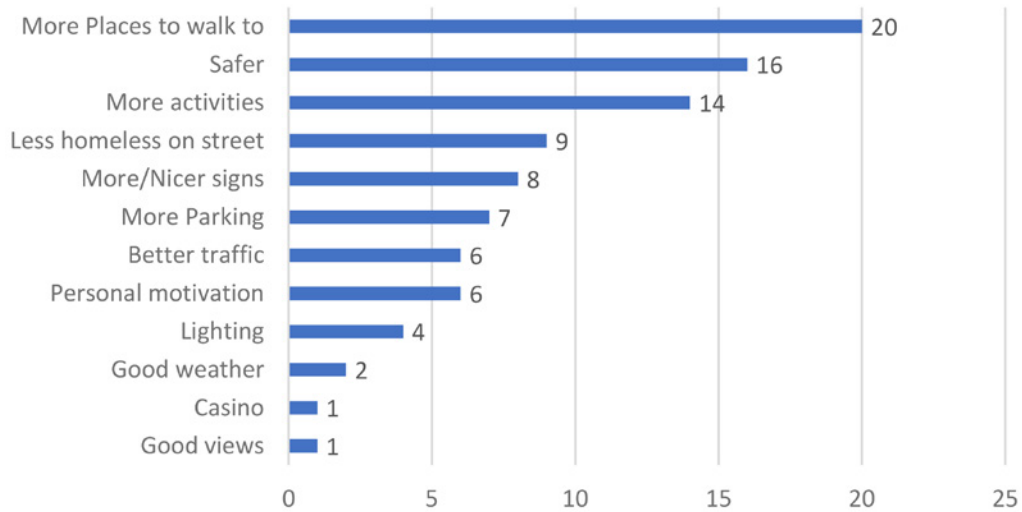


Figure 4: Factors that encourage people to walk more.

## Methodology

### SURVEY

Questionnaires were created to establish baseline data about wayfinding in Springfield for both pre- and post-installation surveys. The questions provided were created to establish general information about how people think of wayfinding in downtown Springfield, before and after the installation. The collected data helped explain if wayfinding makes any difference to the walkability. The questionnaire also addressed how people reacted to the new wayfinding system.

### PRE-INSTALLATION SURVEY

A major goal of the pre-installation survey was to determine to what degree respondents were familiar with nearby landmarks and to what degree they were aware of their proximity to them, and the time it takes to walk to them. Information gathered from the survey was used to establish “baseline” data.

### POST-INSTALLATION SURVEY

Similar to the pre-installation survey, most post-installation survey respondents spent some of their day walking in the downtown area. A major goal of the post-installation survey was to assess to what degree respondents were familiar with the temporary signage, and if the signs had influenced changes in behavior (more walking). In addition, respondents were asked for their opinions on the usefulness of the sign design and “message” conveyed.

### Results

#### PRE-INSTALLATION SURVEY: (RESPONDENTS N=103)

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.

Why don't more people walk to their 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.

#### POST-INSTALLATION SURVEY: (RESPONDENTS N=90)

Signs are a positive addition. Of the 22 respondents who said they were aware of the signs, all 22 thought the signs were a positive addition. And although 70 out of the 90 respondents had never noticed the signs, 78% thought they would be a good addition to the city (after the surveyor provided some information about the purpose of wayfinding signage). The data suggests that if the signs were more noticeable, it is possible they could impact peoples' choices around walking (Figure 3).

#### WHAT WOULD ENCOURAGE PEOPLE TO WALK MORE

This open-answer question asked about people's perception on what in general would make them willing to walk more. Unsurprisingly, the most popular answers are more places and more activities to walk to, and a safer walking environment (Figure 4).

#### Conclusions

Signs are a positive addition. Of the 22 respondents who said they were aware of the signs, all 22 thought the signs were a positive addition. And although 70 out of the 90 respondents had never noticed the signs, 78% thought they would be a good addition to the city (after the surveyor provided some information about the purpose of wayfinding signage). The data suggests that if the signs were more noticeable, it is possible they could impact peoples' choices around walking.

People will walk if there is something that attracts them. It's notable that 1/3 of survey respondents said they would walk more if there were more things to walk to. Examples of things to walk to include outdoor events/celebrations and also coffee shops and restaurants. A significant number of survey respondents suggested that the City of Springfield should program more activities in the downtown area. These activities will encourage more people to bike and walk. Signs should be designed to be more noticeable.

#### References

- Agbali, M., Trillo, C., Fernando, T., Ibrahim, I. A., & Arayici, Y. (2018). Conceptual Smart City KPI Model: A System Dynamics Modelling Approach. *2018 Second World Conference on Smart Trends in Systems, Security and Sustainability (WorldS4)*.
- Airaksinen, M., Seppa, I. P., Huovila, A., Neumann, H., Iglar, B., & Bosch, P. (2017). Smart city performance measurement framework CITYkeys. *2017 International Conference on Engineering, Technology and Innovation (ICE/ITMC)*.
- Duany, A., Speck, J., & Lydon, M. (2010). *The smart growth manual*. New York: McGraw-Hill.
- Harrison, J. A. (2017). Rust Belt Boomerang: The Pull of Place in Moving Back to a Legacy City. *City & Community, 16*(3), 263-283.
- Morckel, V. C. (2017). Using suitability analysis to prioritize demolitions in a legacy city. *Urban Geography, 38*:1, 90-111.