

June 2017

Implementing Pedestrian Wayfinding Systems in Massachusetts

Introduction

Encouraging utilitarian walking as part of everyday life is a shared objective of many stakeholders in Massachusetts, including WalkBoston, local community groups, municipal governments, and state agencies. One potential strategy to increase everyday walking is the installation of wayfinding signs, which can give local residents clear information about walking routes and walking times to get to and from key destinations. With funding from the Massachusetts Department of Public Health (DPH), WalkBoston has now worked with seven communities to create systems of wayfinding signage, in efforts to advance our common goals of shifting towards non-vehicular modes of travel and promoting physical activity.



WalkBoston senior project manager Bob Sloane reviews signs prepared for the organization's initial wayfinding pilot in the Codman Square area of Dorchester, Boston.

WalkBoston's initial wayfinding project in 2014 focused on Codman Square, which is a hub of commercial and civic activity in the Dorchester neighborhood of Boston. Working with local community organizations and DPH's statewide Mass in Motion program, WalkBoston installed 90 wayfinding signs along the arterial streets that lead to and from the Square.

Building off this initial effort, in 2016 WalkBoston placed approximately 300 additional wayfinding signs in five communities

(Springfield, Turners Falls, Fall River, Northampton, Belchertown) in partnership with DPH's "1422" program, which is funded by the US Centers for Disease Control to promote utilitarian walking. WalkBoston also installed three pavement decals near its office in downtown Boston to test the durability of sidewalk marking materials. This test was inspired by the Fall River wayfinding project, which included the installation of several pavement decals in locations where there were no street poles to mount signs.

MAKING MASSACHUSETTS MORE WALKABLE

Table 1 summarizes WalkBoston's wayfinding efforts to date. The report sections that follow provide more details about the wayfinding projects in each of the communities, which range from busy downtown urban centers to rural villages. The size and scope of the projects varied greatly as well, ranging from 10 signs along a rural corridor in Belchertown to over 130 signs in Fall River connecting downtown and the newly opened Quequechan River Rail trail to each other and to neighborhood destinations. In sum, WalkBoston's experience shows that wayfinding projects can be adapted to meet the needs of diverse communities at different scales.

WalkBoston has conducted follow-up evaluation site visits to Turners Falls and Fall River to survey passersby about the signs and their effectiveness. In addition, WalkBoston's pavement decals in downtown Boston invited viewers to submit their thoughts via e-mail and social media. The feedback gathered via these channels has been largely positive, and survey results from Fall River in particular suggest that wayfinding signs can potentially have a substantial impact in getting people to walk and bike more often. WalkBoston is now in conversation with partners at DPH to explore the potential for more rigorous wayfinding evaluation methodologies to further determine the signs' efficacy in promoting utilitarian walking.

Since these wayfinding signs and decals were installed, other communities ranging from Boston neighborhoods to Miami-Dade County, Florida have contacted WalkBoston to inquire about installing similar wayfinding and information systems. This interest indicates that wayfinding signs are a highly visible and tangible measure that can catalyze community excitement about walking.

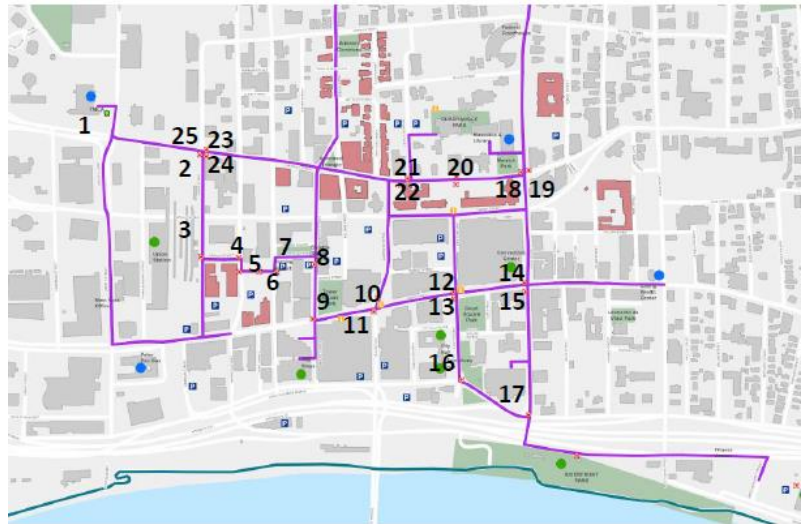
Table 1: Summary of WalkBoston’s Wayfinding Projects

	Codman Square (Boston)	Downtown Boston	Springfield	Fall River	Montague (Turners Falls)	Northampton	Belchertown
Number of signs	90	3 pavement decals	41	131 signs, 7 pavement decals	17	100	10
Type of routes	neighborhood center	downtown urban center	downtown urban center	downtown urban center, neighborhood connections, regional path network	village center	downtown center, regional path network	village corridor
Approving municipal agency	Transportation Department	Arts Council	Public Works Department	Public Works Department	Planning Department	Planning Department	Public Works Department
Type of material	coroplast	decal	coroplast	coroplast, decal	coroplast	metal	metal
Sign fabricator	vendor (identified by WalkBoston)	vendor (identified by WalkBoston)	vendor (identified by WalkBoston)	vendor (identified by WalkBoston)	vendor (identified by WalkBoston)	municipality	municipality (Northampton)
Sign installer	WalkBoston	vendor (identified by WalkBoston)	municipality	municipality	municipality	municipality	installation pending (as of May 2017)
Sign evaluator	N/A	WalkBoston solicited feedback online	pending from UMass Landscape Architecture program	WalkBoston conducted field survey	WalkBoston conducted field survey	pending from Healthy Hampshire	pending from Healthy Hampshire

Methodology

WalkBoston worked in close consultation with local stakeholders to determine desired walking destinations, routes and sign locations for the community wayfinding projects. To ensure that routes would be adequately signed, WalkBoston established a metric that signs ideally should be placed at 2 minute walking intervals (a distance of about 1/10 mile for a healthy and able-bodied adult). This required identifying existing street poles to ensure that the signs could be easily installed.

Sign Location: Through a combination of on-the-ground fieldwork and virtual scouting/distance measuring via Google Maps and Google Earth (including use of the Streetview feature), WalkBoston and local partners identified specific streets and poles that met the specifications for the desired walking routes. (At several locations in Fall River where no poles were available, WalkBoston used sidewalk decals instead.)



A map of the wayfinding loop designed for downtown Springfield.

WalkBoston then created spreadsheets with specific details for each individual sign, including its pole location, 2-3 destinations it would point to, directional arrows and walking times to get to those destinations, and a unique identifying label to easily determine its location post-fabrication. The spreadsheets provided the sign fabricators with the information necessary to print each sign.

Location	Viewer Facing	Banner	Arrows	Destination	Distance	Sign No.
N side of Middle Street at the baseball field in the SE corner of Kennedy Park	E	Saint Anne's	^	Quequechan River Trail	20 min	Mid-1
N side of Middle Street just W of Forest St.	E	Saint Anne's	^	Quequechan River Trail	17 min	Mid-2
N side of Middle Street just W of Forest St.	W	Saint Anne's	^	Kennedy Park	3 min	Mid-3
NE corner of the intersection of Middle St. and Whipple St.	E	Corky Row	^	Quequechan River Trail	14 min	Mid-4
NE corner of the intersection of Middle St. and Whipple St.	W	Corky Row	^	Kennedy Park	6 min	Mid-5

A sample spreadsheet database of sign specifications for Fall River.

Sign Fabrication: WalkBoston used the same vendor for sign fabrication in each community except for Northampton and Belchertown, where the municipalities chose their own vendor. The basic design layout for the Codman Square signs, which was developed in consultation with Garfinkle Design, a local graphic designer, was replicated for the subsequent wayfinding projects. WalkBoston's vendor printed the signs on coroplast, a type of corrugated plastic, and incorporated grommets into the design so the signs could be easily mounted on poles using large plastic zip-ties. The coroplast signs had a unit cost of approximately \$20 per sign and were paid for with funding from DPH. Northampton and Belchertown used their own resources to fabricate metal signs that were mounted similar to other city signs.

Sign Installation: No formal permitting processes were required for installing the signs, though written/verbal permission was received from municipal agencies in each community so that signs could be mounted on existing poles as long as they did not obstruct any pre-existing signs. WalkBoston staff installed the signs in Codman Square and municipal staff installed them in all the other communities. Where sidewalk decals were used, WalkBoston’s vendor installed them directly on the sidewalk.

Codman Square, Dorchester, Boston: Neighborhood sign network

In the Boston neighborhood of Dorchester there are few signs or cues to promote walking or bicycling. The objective of WalkBoston’s 2014 Codman Square wayfinding project was to provide easy-to-find directional and time information for residents and visitors who might want to move about on foot or by bike. The overarching goal was to encourage walking and biking by showing that there are relatively short walking and biking times to get to specific destinations.

The signs were conceived and implemented through a partnership of city agencies and non-profits including the Boston Public Health Commission, Boston Department of Transportation, Healthy Dorchester (a community group associated with DPH’s statewide Mass in Motion program) and WalkBoston. Healthy Dorchester convened the meetings of the planning group and WalkBoston provided a design and the details for printing each of the signs. Funds for the preparation and installation of the signs were provided by a number of private and non-profit sources and by a grant from Citizens Bank.

The project had two types of signs:

1. **Orientation signs:** A handful of signs at the center of Codman Square pointing toward destinations that can be reached by walking or cycling short distances (such as the MBTA Fairmount Line station on Talbot Avenue), and giving times of how long it will take to get there either by walking or cycling.
2. **Trail blazers:** Reminder signs along several streets to tell walkers or bicyclists the remaining time to their destination.



WalkBoston’s senior project manager Bob Sloane installs a wayfinding sign in Codman Square.

The pilot project used inexpensive coroplast signage that could be easily installed and removed using plastic straps threaded through grommets, which were built into the signs’ design. All signs were installed on light poles 7’ above the sidewalk. The signs were not intended to be permanent, but as of this writing nearly three years post-installation, the vast majority of the signs are still up – a testament to their durability. These basic design elements and materials were replicated in WalkBoston’s subsequent wayfinding projects.

City Hall Avenue, Downtown Boston: Prototype sidewalk decals

In preparing the wayfinding signs for Fall River, WalkBoston encountered several locations where signs could not be mounted on poles and, in response, devised several decal signs that could be placed directly on the sidewalk. WalkBoston was interested in testing the durability of such sidewalk decal signs at a location where we could easily observe them. The pedestrian alley next to WalkBoston's office – City Hall Avenue – was chosen for this experiment because it is an extremely busy pedestrian-only facility, presenting opportunities to test whether the decals could survive heavy volumes of foot traffic as well as the snowy winters of Boston. Three signs were prepared showing walking distances to local destinations in Downtown Boston. The signs were installed professionally by the company that printed the decals.

The quality of the sidewalk surface may affect the durability of the decals. The three decals were installed on different portions of the sidewalk, each with a distinctive surface. One sign was located on a brick sidewalk, one on a relatively smooth concrete portion of sidewalk, and one on a concrete surface



WalkBoston installed three wayfinding pavement decals near its office in downtown Boston to test their durability. The decals encouraged viewers to send feedback to WalkBoston via e-mail and social media.

with a rough surface. The sign on the brick sidewalk endured relatively well, but showed immediate wear on the divisions between the bricks. It was otherwise legible after considerable wear (about a year post-installation). The sign on the smooth sidewalk was removed for sidewalk reconstruction almost immediately after the sign was installed, so there was insufficient time to draw any conclusions about the durability of this sign on this kind of pavement. The third sign weathered foot traffic fairly well, but the rough surface penetrated the sign significantly. However, the sign, despite its weathering, remains visible nearly nine months after installation.

Feedback was requested on the prototype signs, by including an email address and social media hashtag to receive comments. About 30 comments were received, providing advice about appearance, color, additional information that might be provided, and general approval of the concept of installing wayfinding signs as decals on downtown sidewalks. A photo of "current conditions" was posted every few weeks and any posts that the public made that included a photo and the hashtag was retweeted to amplify the message and encourage others to give opinions.

Springfield: Metro Center walking loop

Springfield's wayfinding signs are part of a program spearheaded by the local Mass in Motion coordinator in the City's Office of Health and Human Services, assisted by staff members from the City Planning Department and the Pioneer Valley Planning Commission. The signs were devised as a pilot project to guide people to and through a busy downtown area. The pilot project is intended to inform a larger citywide wayfinding project that the City has commissioned with Applied Wayfinding, a company that specializes in such systems.

To inform the wayfinding installation, students from UMass-Amherst conducted a survey in February and March of 2016 to assess the ways that people, especially pedestrians, travel to and through the downtown/Metro Center area of Springfield. The survey provided information about respondents' familiarity with the location of specific destinations in the downtown area, whether they knew how to get to those destinations on foot, and whether they knew how much time it takes to get to those destinations on foot.



Springfield staff install wayfinding signs to create a two-way walking loop between downtown destinations.

The survey responses suggested that people that live and/or work downtown know how to get around on foot and how to walk to major downtown locations. Even though the surveys suggested that respondents are familiar with walking routes and getting around downtown, about 25% of them did not know the time it would take to get to a specific location on foot. The results suggested that the wayfinding project should call attention to walking times.

Potential destinations for walkers in downtown Springfield were carefully described by City representatives. Using these destinations, the first network of routes was planned locally. City Hall, the Basketball Hall of Fame, the YMCA and the Caring Health Center were among the destinations included. A loop of streets became the focus of the planning. Signs were placed back to back to give information in both walking directions as well as to some nearby destinations that were not on the loop itself.

Springfield staff worked with WalkBoston to determine the design of the signs, along with the destinations and the distances between signs and places. Local staff also worked on sign installation locations and identified the specific local streetlight and utility poles where the signs were hung. Post-installation evaluation of the signs' effectiveness will be conducted by faculty and students from the Landscape Architecture and Regional Planning program at UMass-Amherst.

Turners Falls, Montague: Navigating a village center

The DPH 1422 wayfinding initiative designated the Franklin Regional Council of Governments (FRCOG) as a recipient of funds for a wayfinding project in one town in Franklin County. Applications were solicited and the Town of Montague was chosen, with the town's principal municipal center, the village of Turners Falls, selected as the site for the pilot.

WalkBoston worked with the town and FRCOG Planning staff to design signage focused on utilitarian walking, but serving visitors as well. The Montague Planning Director worked closely with WalkBoston to identify pedestrian routes in the town center and to select locations along those routes for signs that would help pedestrians navigate the center by showing destinations and walking times. Destinations included local landmarks, parks, the library, markets, and the community theatre. In addition, the signs indicate the state historic museum/discovery center at the Connecticut River Falls and the network of bicycle routes throughout the community, which also serve as extended walking routes. The signs were in both English and Spanish so that they would be accessible to Turners Falls' growing Hispanic/Latino population.



Wayfinding signs in Turners Falls orient residents and visitors alike to destinations in the downtown village area.

WalkBoston worked with the community to determine a sign installation method that would be used to hang signs on local street light and utility poles. In addition to installation techniques, work included determination of the designs of each sign, including the visibility of varying sizes of signs, the font size of lettering and an identifying color banner. Based on WalkBoston's experience with the Codman Square signs, these signs of the same material are likely to endure the winters and bad weather for at least two years.

Evaluation: In September 2016, WalkBoston staff visited Turners Falls to conduct an intercept survey to evaluate the wayfinding signs post-installation. 21 surveys were collected from passersby along and around Avenue A, which constitutes the heart of downtown Turners Falls and the location of the vast majority of the wayfinding signs. Of the 21 respondents, an overwhelming majority (19) said that the signs were a good addition to Turners Falls, with 14 indicating that they help people find their way around and 2 indicating that they encourage walking.

After reviewing the results, WalkBoston realized that the survey did not provide specific insights into what respondents may have learned or how their walking behavior may have changed as a result of the wayfinding signs. As a result, WalkBoston updated the survey before conducting similar evaluations in Fall River (summarized elsewhere in this report) in November and December 2016. The survey instruments used in Turners Falls and Fall River are included in Appendices A and B, respectively.

Fall River: Connecting to and from the Quequechan River Rail Trail

WalkBoston worked with Fall River, which is both a Mass in Motion and 1422 grantee, and its consultants to design the routes and signs, and to determine locations for sign placement. Routes were chosen to highlight walking access to Downtown Fall River, city parks, and the newly-established Quequechan River Rail Trail (QRRT). Many streets were examined within the existing street network, which is generally a grid with many potential routing locations.

The streets chosen for the walking routes were roughly based on clusters of five or six blocks in neighborhoods adjacent to the QRRT, where residents could readily find one or more nearby routes leading toward central destinations. The determination of walking routes was not necessarily straightforward, as several streets in Fall River lacked sidewalks and/or had poor or nonexistent protected street crossings. A combination of online scouting and on-the-ground fieldwork was necessary to determine alternate routes that would ensure the safety of pedestrians.

Routes were designed with Downtown or the QRRT as destinations at one end and locally important landmarks (e.g. city parks) as destinations at the other end. Routes were marked in both directions, so that a walker could follow a signed route toward Downtown or the QRRT and return to the neighborhood simply by following the route in reverse.

The signs were hung on local street light and utility poles. Individual signs were grouped by banners showing neighborhood names on the signs. Most of the signs were made of the coroplast material used in Codman Square. In a departure from the usual method of installing signs, WalkBoston also worked with the City to determine how to successfully communicate directional changes along routes where no street light or utility pole was available.

Consulting with vendors, WalkBoston found a material for installing signs flat on sidewalks to present visible instructions for walkers to make turns at critical locations. These signs were used in seven locations where poles were not available. The sidewalk sign material has been advertised as being effective over several years and part of the project will be to monitor their use and condition over time. The need to install pavement markings in Fall River inspired a pilot test of sidewalk signs at three locations near WalkBoston's downtown office, as described earlier in this report.



Eric Andrade of Mass in Motion Fall River points out a wayfinding sign near Government Center in the city's downtown.

Evaluation: WalkBoston staff conducted two site visits to Fall River on November 17 and December 13, 2016, to administer surveys evaluating the effectiveness of the wayfinding signs post-installation. The survey instrument used is included in Appendix B to this report. A total of 23 surveys were given to passersby at the following locations:

- Government Center (17 surveys collected on November 17)
- Pulaski Park at the corner of Warren/Lapham Streets (three surveys collected on December 13)
- Quequechan Street trailhead to the Quequechan River Rail Trail (three surveys collected on December 13)

The overwhelming majority of survey respondents (19) said the signs were a good addition to Fall River, with only one respondent disagreeing. Ten respondents liked the signs because they help people find their way around and two respondents liked the signs because they encourage walking (respondents could provide multiple answers here). 10 survey respondents said the wayfinding signs conveyed new information to them, and 5 respondents said the signs did not convey new information.

Of the 12 respondents who provided information about the impacts of the signs on their behavior, five said that the signs have made them walk or bike more often and seven that the signs have not made them walk or bike more often. Of the total 23 respondents, 5 said that the signs had gotten them to walk or bike more often – which means that the signs created a beneficial response from 22% of the people surveyed. In the realm of low-cost means to trigger increased physical activity this is an impressive outcome. However, the very small sample size makes it inadequate to draw reliable conclusions. Therefore, given the promising results of the survey to date, WalkBoston is now consulting with project partners at the MA Department of Public Health to determine whether a more rigorous survey may be appropriate.

Northampton: Creating a regional sign network

The City of Northampton has long been known for its extensive path network which reaches from the city out to neighboring communities. For example, the network links downtown Northampton with the City's neighborhoods of Leeds and Florence. The network of paths had small kiosks to orient path users, but few signs that indicated where destinations were from the path or how long it would take to walk or bike to them.

The City's Planning Department staff led the effort to update the signage on the paths and chose locations and sign types, including standard kiosk signs of aluminum, and route finding signs also of aluminum, as well as signs for bus stops made of cardstock. The City produced the signs in its own facilities.

Destinations included local landmarks, such as the Smith College buildings, parks, the library, markets, and the community theatre. In addition, signs



Wayfinding signs in Northampton connect regional walking and biking trails to destinations in the City, and vice versa.

point to the extensive network of bicycle paths both within and outside the center of the City, which also serve as extended walking routes.

The design generally followed WalkBoston's template for wayfinding installations, using a basic font design and size, along with arrows, destinations and walking or biking times. The kiosk signs were an exception because each had a pre-determined shape governed by the dimensions of the sign space of the existing signs to be replaced.

Sign installation methods varied. Some were hung on local street light and utility poles; others were hung on fences along the pathways. The kiosk signs were placed on preexisting supports that had been used for existing signage. Post-installation evaluation of the signs' effectiveness will be conducted by the Mass in Motion community partner Healthy Hampshire, which also worked with the City in designing the wayfinding system.

Belchertown: Town center wayfinding

Belchertown is close to Northampton and its 10 signs were integrated into the program devised for Northampton. The wayfinding signs for Belchertown were prepared by the Northampton Department of Public Works on aluminum base material chosen to bring longevity to the signs. Belchertown staff chose the destinations for the signs and the banner color and helped identify the walking and biking times. However as of this writing, the Public Works Department in Belchertown has yet to install the signs.

Appendix A: Turners Falls wayfinding evaluation survey

Survey of Turners Falls – Effectiveness of signs

Date:

1. Do you live in Turners Falls?

Yes No, work in Turners Falls, live elsewhere No, just visiting

2. How often do you come to Turners Falls?

Every day 1-2 x per week Rarely

3. How did you get to Turners Falls today?

Walk Drive Bike Bus

4. Have you noticed the signs showing walking distances?

Yes No

5. Did you realize how short a walk it is to different places in Turners Falls?

Yes No

6. Do you think the signs are a good addition to Turners Falls?

Yes: No

Helps people find their way around Encourages walking

Makes the streets more active Identifies the center as a walkable place

7. Have you heard people mention the signs?

Yes - If so, what do they say? No

Good for business Makes TF more receptive to all kinds of people

Completes the street – sign network, availability of walking routes, etc.

Other:

8. Do you think more people walk now than in the recent past?

Yes No

9. Any other comments or questions?

Appendix B: Fall River wayfinding evaluation survey

Survey of Fall River – Effectiveness of signs

Date:

Survey location:

1. Do you live in Fall River?

Yes *If Yes, what neighborhood?* No, work in Fall River No, just visiting

2. Have you used the QRRT yet? If so about how often?

Every day 1-2 x per week Rarely

3. How do you use the QRRT? (circle all that apply)

Recreational walking Recreational biking Walking to destinations Biking to destinations

4. What destinations in Fall River do you walk/bike to? (circle all that apply)

Government Center Parks (specify) Schools (specify) Other

5. Have you noticed the signs showing walking distances and destinations?

Yes *If Yes, how did you first become aware of them?* No

Saw them Newspaper/radio Social media/internet Friend/relative Other

6. Have the signs conveyed new information to you?

Yes *If Yes, what information?* No

Walking times to destinations Walking routes to destinations Other

7. Has awareness of the signs made you walk/bike more often?

Yes No

8. Do you think the signs are a good addition to Fall River?

Yes *If Yes, why?* No

Helps people find their way around Encourages walking

Makes the streets more active Identifies the center as a walkable place

9. Have you heard people mention the signs?

Yes *If Yes, what do they say?* No

Good for business Makes Fall River easier to get around

Completes the street – sign network, availability of walking routes, etc.

10. Any other comments or questions?