



## Chapter 1

# INTRODUCTION

The Town of Watertown, like other communities across the Commonwealth of Massachusetts, strives to be an attractive and livable place for all of its residents. This includes providing pedestrians and bicyclists with safe routes through and around town, encouraging local economic growth, and increasing open space throughout the community. Constructing a multi-use path through the heart of Watertown would enhance these amenities and offer these benefits.

For these and other reasons, the Town of Watertown’s Department of Community Development and Planning (DCDP), the Watertown Bicycle and Pedestrian Committee (WBPC) and Watertown Citizens for Environmental Safety (WCES) are spearheading an effort to develop the Watertown Community Path (referred to in this report as the “Community Path” or the “Path”). They commissioned this report.

**Figure 1.1**  
*The Watertown Community Path;*  
*Data source: MassGIS;*  
*Cartographer: Eunice Kim*



Approximately 1.75 miles in length, the Community Path would run from School Street in East Watertown, through Watertown Square and on to Pleasant Street near the Charles River. It would roughly follow a former railroad right-of-way (ROW) that was once used by a passenger and freight railroad in the region. The Path would provide a link between the 18-mile Charles River Reservation Path and the Minuteman Bikeway, which extends 11 miles from Cambridge to Bedford.

This report studies the feasibility of developing this Community Path. It includes preferred and alternative routes for the Path as well as accompanying maps. Also included are an analysis of existing conditions, design standards, recommended cross sections, conceptual designs and strategies for implementation.

## 1.1 Methodology

The Field Projects team used a variety of methods to advance two main goals: designing the Community Path and raising community awareness about its potential development. Methods included performing site visits, developing and administering a survey, conducting a community meeting, carrying out interviews, and researching case studies and other relevant information. The team also produced cross-sections and conceptual designs of the Community Path using Microsoft Publisher and Google SketchUp and created maps using data produced by Geographic Information Systems (GIS) software.

One of the team's main tasks was to determine a preferred route and possible alternatives for the Community Path. To do this, the team needed to become familiar with the physical environment around the Path corridor, so members conducted several site visits in the early stages of the project. The team took extensive notes and photographs of each part of the Path corridor, focusing particularly on potential obstacles such as privately-owned properties, missing curb cuts, developed parcels and dangerous street crossings. This information was used to consolidate notes and visualize these obstacles on a map, allowing the team to begin the process of selecting a preferred route for the Path.

The team divided the Path into two sections: Section A, which stretches from School Street to Mount Auburn Street, and Section B, which stretches from Mount Auburn Street to Pleasant Street. After getting community feedback, the team performed follow-up site visits to help fine-tune the preferred and alternative routes.

Another major part of this Field Project was to conduct community outreach in order to raise local awareness of the Community Path and get input from residents and business owners. To achieve this goal, the team employed three tools and techniques. The team:

- Created and administered a survey to abutters, nearby businesses and key stakeholders;

- Conducted a community meeting on the proposed Community Path; and
- Interviewed stakeholders and abutters.

The Field Projects team created a survey to gauge community awareness and opinions about the proposed Path. This one-page survey was mailed to 172 people, mainly those who live or own property near the Path corridor. Copies of the survey were also left at the Watertown Free Public Library and other public facilities in town. In addition, the team created an online version of the survey on Survey Monkey and widely publicized the link. More than 270 people responded to the survey. The team tabulated, mapped and incorporated the survey results into the final design of the Community Path.

On March 4, 2010, the team held a community meeting about the proposed Path at Watertown Town Hall. Approximately 35 people attended, including clients from DCDP, WCES and the WBPC. During the meeting, the team gave an overview of the Community Path and the work that had been done up to that point, handed out surveys, conducted a mapping exercise, and answered questions from meeting attendees. See Chapter 4.3 for details on the mapping exercise. Two members of the team facilitated the meeting and answered questions, while the three others took notes and photographs of the meeting. The team used the information it collected to make changes to the preferred and alternative routes. See Chapter 4.2 for details on the community meeting.

The Field Projects team conducted phone and in-person interviews with key stakeholders – those who live or work near the proposed Path – to ensure their input was received and their opinions were incorporated into any final recommendations. See Chapter 4.5 for details of the interviews. The team also conducted research on other existing multi-use paths and cycle tracks in the region, which helped guide its design work. This research also provided examples of how other communities successfully implemented paths in the face of challenges. Research on local and federal design standards for multi-use paths and cycle tracks further informed the design of the Community Path. See Chapter 3 for details on the case studies.

All of the information gathered was incorporated into the team's final design of the Community Path and the preferred and alternative routes. The information also helped the team create detailed maps of the route, recommended cross-sections and conceptual designs.

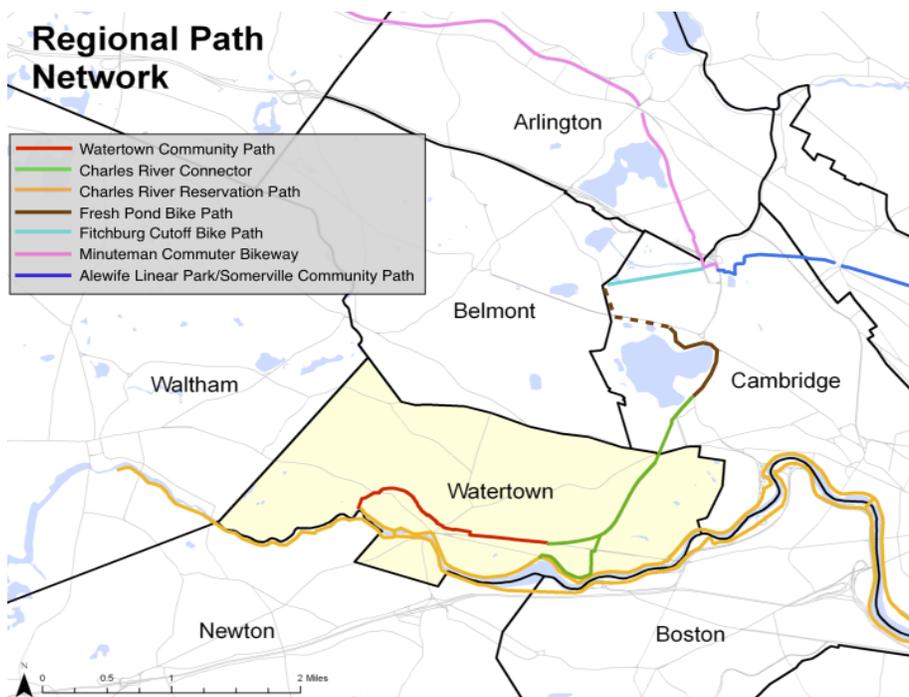
## 1.2 Project Description and Benefits

The Community Path is proposed to run from the intersection of School and Arsenal streets in East Watertown to Watertown Square. From there, the Path would connect to the existing Linear Park path behind Watertown Town Hall and continue to Pleasant Street, where it would connect to the Charles River Reservation Path.

The Path would roughly follow a former railroad ROW, which has long been abandoned, sold to private owners, and developed. In the same way the railroad once brought growth to businesses in and around Watertown, the redevelopment of the former railroad ROW into a multi-use path could have the same effect today.

The WBPC has envisioned the development of this Path for more than a decade. The committee pushed – successfully – to have the project included in the Watertown Open Space and Recreation Plan 2005-2010, which was approved by the Town Council. Goal Six of that plan is to “make Watertown friendlier to pedestrians and bicyclists,” and listed as an objective under that goal is the development of a “multi-use path from School Street to connect with the Charles River in West Watertown.”<sup>1</sup>

The Community Path project is part of a broader effort to augment the multi-use network of paths and trails in the region. This network includes both the Minuteman and Charles River Reservation paths. The map in Figure 1.2 depicts this regional network, with the Community Path being a central link.



**Figure 1.2**  
*Regional network of multi-use paths;*  
*Data source: MassGIS;*  
*Cartographer: Eunice Kim*

In addition to expanding this network, the Community Path provides an important opportunity to link portions of Watertown in a safe and accessible manner, particularly through Watertown Square. The Path will also increase the amount of open space in town and provide pedestrians and cyclists with safe connections to businesses, parks, playgrounds, and other recreational and cultural facilities. Vehicular traffic could also be reduced, which would ease congestion and benefit the environment. Finally, by providing safe alternative routes within town, the Path will encourage residents to remain local when shopping and dining, thereby

encouraging the economic growth of the community.

Other potential benefits of the Community Path include:

- Providing a place for people of all ages to exercise;
- Uniting previously-separated neighborhoods;
- Beautifying the surrounding landscape;
- Attracting more visitors to Watertown; and
- Creating opportunities for community involvement, such as public art displays.

### 1.3 Community Description

Watertown is a suburban community in Middlesex County in eastern Massachusetts just northwest of Boston on the Charles River.<sup>2</sup> Bordered by Belmont, Cambridge, Boston, Newton and Waltham, the city, known as the Town of Watertown, is 4.16 square miles in area. The municipality has a town manager-council form of government and a population of approximately 32,023.<sup>3</sup>

Watertown was incorporated in 1630.<sup>4</sup> Founded as a Puritan colony, it functioned as an industrial and manufacturing center until the mid-1990s.<sup>5</sup> Factories lined the banks of the Charles River, and the Boston and Maine railroad branch was constructed to accommodate the needs of industry in the area. Today, industry has by and large disappeared from the town, with many old factories having been converted into other uses such as offices and residences.<sup>6</sup>

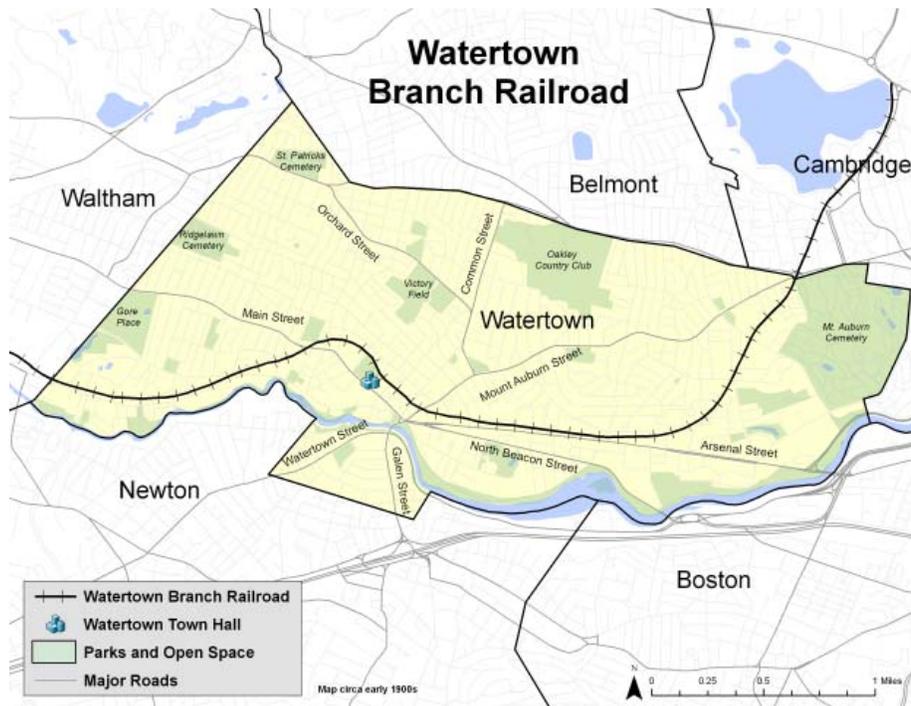
Watertown is an ethnically and culturally-diverse town that includes a large Armenian community. Approximately 89 percent of residents are Caucasian, 6 percent are Asian, and 3 percent are African-American/Black.<sup>7</sup> The median household income is \$70,127.<sup>8</sup> That is nearly \$20,000 more than the median household income in Boston, which is \$51,849.

### 1.4 Watertown Branch Railroad History

The proposed Community Path roughly follows the former Watertown Branch Railroad ROW, shown in the map in Figure 1.3. If constructed, the Path will therefore allow people to retrace the steps that led to the development of the Waltham and Watertown communities and their respective industrial areas. Completed in 1949, the Watertown Branch Railroad was originally a branch of the Fitchburg Railroad. Throughout much of its early history, it carried large loads of both freight and large numbers of passengers. Through the western end in the Bemis neighborhood of Waltham, the railroad served thriving manufacturing industries and river mills set up near the Charles River. The railroad branch was also a popular passenger route. It was so heavily traveled that

it was one of the few branch lines at that time to be double-tracked.<sup>9</sup>

Both passenger and freight service declined when the Boston and Maine Railroad took over the Fitchburg in 1900.<sup>10</sup> Passenger service ended in 1938, and freight service on the western portion ended in 1991, with that portion then being abandoned.<sup>11</sup> The middle portion of the line – the section our Field Projects team focused on – was abandoned in 1960 after the grade crossing at Mount Auburn Street was eliminated.<sup>12</sup> The Boston and Maine Railroad petitioned to abandon the eastern portion in May of 2005.<sup>13</sup>



**Figure 1.3**  
*Former Watertown Branch Railroad;*  
*Data source: MassGIS;*  
*Cartographer: Eunice Kim*

## 1.5 Existing Bicycle Infrastructure

Existing bicycle infrastructure in Watertown includes portions of multi-use paths, several bike lanes, and many bike racks. Part of the Charles River Reservation Path, a multi-use path along the Charles River owned by the Massachusetts Department of Conservation and Recreation, runs through the southern portion of Watertown. Additionally, behind Watertown Town Hall is the 0.35-mile Linear Park path, which provides bicyclists and pedestrians with an off-street route between Saltonstall Park and Moxley Playground. There is also a short, off-street bike path on the property of Lexus of Watertown on Arsenal Street.

Additionally, a few major streets in Watertown have on-street bike lanes, including North Beacon Street and portions of Arsenal Street. Figure 1.4 shows the bike lanes on Arsenal Street. The Arsenal Street bike lanes are near, if not adjacent to, the Community Path. They run westbound from School Street, ending near the rear entrance to the Vanasse Hangen Brustlin Inc. (VHB) property on Arsenal Street. The eastern section of

Arsenal Street, from School Street to the Cambridge city border, is a shared roadway marked with a signs that say “Share the Road.”

There have been efforts to improve bicycle infrastructure in Watertown in the last 10 years. In 2003, Greenman-Pedersen, Inc (GPI), working in collaboration with the Town of Watertown Department of Public Works (DPW) and Watertown Bicycle Committee (now the WBPC), completed a Bicycle Transportation Plan for the city.<sup>14</sup> The plan outlined recommendations for bicycle accommodations such as on-street bike lanes, signage, and safety improvements. So far, none of the recommendations has been adopted. There is a plan, however, to study the possible reduction in the number of travel lanes on Mount Auburn Street from four to two, which would leave room for bike lanes on both sides of the street.

In 2007 and 2008, 37 new post and ring bike racks and 10 U-racks were installed in Watertown Square, Coolidge Square and Victory Field.<sup>15</sup> The cost of the new bike racks, \$4,320, was reimbursed to the Town of Watertown (referred to as the “Town” in this report) by the Metropolitan Area Planning Council (MAPC) through its Regional Bike Parking Program. The Town only paid for shipping and labor.

The installation of the new bike racks followed an inventory of bicycle parking that was conducted by WBPC in 2006. Through the inventory, the committee found that the majority of bike racks in Watertown – there were 55 total – were old, damaged and placed in locations that were inconvenient or prone to theft.<sup>16</sup> The inventory also revealed that Watertown Square and Coolidge Square, two major business districts, lacked bicycle parking.

**Figure 1.4**

*Bike lanes on Arsenal Street;*

*Source: Eunice Kim*



## 1.6 Recent Work on Multi-Use Paths in the Watertown Area

Part of the abandoned Boston and Maine Railroad corridor in Watertown is being redeveloped into a multi-use path called the Charles River Connector, which is shown in Figure 1.2. The project is expected to be completed in two phases.<sup>17</sup> Phase 1 is the Watertown Branch Rail Trail, spearheaded by the Massachusetts Department of Conservation and Recreation; it is the section of the path that will run from School Street – the northern end of the Community Path – to Arlington Street. The State fully funded the construction of this phase as part of the Patrick-Murray administration’s Massachusetts Recovery Plan, and work is expected to begin this summer. The other phase will run from Arlington Street to Fresh Pond in Cambridge. Its completion is contingent upon several factors, including pending acquisitions of rights-of-way.

The Watertown DPW and Watertown Town Council’s Committee on Public Works have included part of the proposed Community Path in their concept plan to redevelop properties between Bacon, Main and Howard streets.<sup>18</sup> That plan, which is shown in Figure 1.5, calls for a new parking lot for residents, a DPW staging area and a proposed Path section to be extended from Linear Park at Waverley Avenue. The parking lot would be on Town-owned property (part of the former railroad ROW), but the new multi-use path, which would run north of the lot, would be on land owned by the Cambridge Water Department. The Town of Watertown plans to get an easement from the City of Cambridge to make use of the land. In exchange, the Town would develop the Path and landscape it.

**Figure 1.5**  
*Concept plan for Bacon Street property;*  
*Source: Watertown Bicycle and Pedestrian*  
*Committee*



## Endnotes

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## Chapter 2

# BICYCLE + PEDESTRIAN PATH RESEARCH

### 2.1 Economic Benefits to Businesses

Investing in bicycle infrastructure can benefit local economies. Since 1991, the State of Maine has made a concerted effort to upgrade and increase its cycling facilities, which has resulted in an estimated \$66 million per year in bicycle tourism.<sup>1</sup> In Portland, Oregon, widely considered to be one of the most bicycle-friendly communities in the country, an upgrade in cycling infrastructure resulted in \$90 million in bicycle activity in 2008 alone. More than half of that activity came from retail shops, repairs, manufacturing and bicycle events.<sup>2</sup> Additionally, residents of Portland have been able to save on transportation costs.<sup>3</sup>

A study conducted in Toronto found that people who biked and walked to the business district of Bloor Street spent more money per month on average than those who drove.<sup>4</sup> Generally, businesses in vibrant pedestrian-friendly communities have found that factors other than parking spaces can have an impact on their customers, including a safer streetscape and the accommodation of alternative modes of transportation.

In some instances, pedestrian paths have anchored the revitalization of entire business districts. Along the Mispillion River Greenway in Milford, Delaware, a shared use path resulted in a net gain of new businesses and supported more than 250 jobs in an area that was vacant 10 years earlier.<sup>5</sup> A trail sited in the old mining town of Leadville, Colorado fostered a reported 19 percent increase in the revenue from local sales tax.<sup>6</sup> The portion of the Watertown Community Path that is proposed to run along Arsenal Street has excellent potential to increase revenues for current businesses and promote economic development.

## 2.2 Crime and Safety Issues

Residents often raise crime and safety-related concerns when a community is considering developing a bike or multi-use path. Studies conducted across the country, however, have found that paths and trails rarely attract crime. For example, a 1998 Rails-To-Trails Conservancy study looked at 372 trails in the United States to document and review the extent of crime on rail-trails.<sup>7</sup> It found that only 11 rail-trails in 1995 and 10 rail-trails in 1996 experienced a major crime such as a mugging or assault.<sup>8</sup> That is only 3 percent of the responding trails.

In addition, only one quarter of rail-trail managers reported any type of minor crime such as littering or graffiti.<sup>9</sup> For example, the national rate of burglary in urban areas is 1,117 incidents per 100,000 inhabitants. None of the urban rail-trails, though, reported burglary to adjacent homes in 1996. In addition, only 5 percent reported incidents of trespassing. Considering these statistics, creating the Community Path in Watertown will not likely result in a significant increase in crime.

## 2.3 Effect on Home Values and Sales

Numerous studies have shown that the average value of properties along paths is higher than that of properties further away. One such study in 2006 examined home sales in seven Massachusetts communities through which the Minuteman Bikeway and Nashua River Rail Trail run. It found that “homes near these rail trails sold at 99.3 percent of the list price, as compared to 98.1 percent of the list price for other homes sold in these towns.”<sup>10</sup> The study also showed that home sales near rail trails sold in an average of 29.3 days, as compared to 50.4 days for other homes.

A study of six different multi-use trails conducted in 2001 by the University of Indiana found that 86-95 percent of neighboring property owners saw either positive effects or no effects on their property values as a result of a trail. In the same study, 81-93 percent reported it was easier for them to sell their property.<sup>11</sup> Moreover, a research study conducted by the University of Cincinnati in 2008 concluded that sale prices near a path increased by \$7.05 for every foot closer a property is located to the trail.<sup>12</sup> These studies suggest that the proposed Community Path could have a positive impact on nearby home values and home sales.

## 2.4 Health Benefits

The development of a multi-use path in Watertown is expected to encourage and accommodate residents who choose to travel by foot or bike. These alternative forms of transportation have been found to benefit public health. According to the British United Provident Association, a 15-minute bicycle ride to and from work five days a week can burn 11 pounds of fat in one year.<sup>13</sup> In addition, people who bike

and walk to work feel more relaxed, have a clearer mind at work and are more eager to start tasks, according to the New York City Department of Urban Planning.<sup>14</sup>

Continued physical inactivity, on the other hand, leads to 10 percent of total deaths and 25 percent of chronic disease related to death.<sup>15</sup> The Alliance for Biking and Walking produced a report this year that says states with the lowest amounts of funding for bicycle and pedestrian infrastructure have higher rates of traffic fatalities and chronic disease.<sup>16</sup> It also found that in nearly every state, bicyclists and pedestrians are at a disproportionate risk of being killed.<sup>17</sup> Nationwide, 10 percent of all trips are made by cycling or walking, but bicyclists and pedestrians suffer a 13 percent rate of traffic fatalities.<sup>18</sup>

## Endnotes

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- 2 Darren Flusche. "The Economic Benefits of Bicycle Infrastructure Investments." League of American Bicyclists, June 2009.
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