



# The Central Mass Indicators Project

## Community Profile: Barre, MA

### Project Overview

In February of 2016, the Central Massachusetts Regional Planning Commission (CMRPC) was awarded a mini-grant of \$8,000 through The Massachusetts Association of Health Boards (MAHB) and Massachusetts Department of Public Health (MDPH) to launch the *Central Mass Indicators Project*. In alignment with the Mass in Motion Municipal Wellness and Leadership Program, this project is intended to increase opportunities for active living and healthy eating by creating conditions that support and reinforce beneficial behaviors for people of all ages and abilities.



CMRPC has 40 member communities across Central Massachusetts, of which only two, Worcester and Northborough, participate in the Mass in Motion program. This gap alone calls for the promotion of Mass in Motion strategies across Central Massachusetts. Many of these municipalities are rural, and Worcester County is home to over 1,500 farms. However, lack of multi-modal transportation options limit the ability of low-income and minority populations to participate in healthy eating options and active living. This project allowed CMRPC to assist its member municipalities in selecting health indicators that provide insight into how well their community promotes healthy eating and active living.

CMRPC engaged with three municipalities within the Central Massachusetts region<sup>1</sup> to identify indicators of active living, healthy eating, and safe physical environments. The three partnering municipalities were Barre, Blackstone, and Charlton. The participating towns assisted with determining health indicators and

providing data to the project team. For the purposes of this project, indicators are defined as measurable data points that “monitor progress on economic and social goals. [They] describe observed societal problems or assets and help represent a normative stance on related issues.”<sup>2</sup> The goal of the project is to help our communities integrate health into their municipal planning processes through the use of indicators. Indicators allow policymakers and the general public to not only better understand the community they live in, but to also track the progress of that community on a variety of levels and sectors. The data collected and reported provides in-depth snapshots that allow municipalities to track longitudinal trends, set community goals, and prioritize action.



<sup>1</sup> Defined as the combined Regional Planning Agencies of CMRPC and the Montachusett Regional Planning Commission (MRPC)

<sup>2</sup> Boston Indicators Project. Boston Foundation. 2016. Online. <http://www.bostonindicators.org/>

## Methodology

CMRPC conducted outreach to its 40 member communities to recruit participants via email blasts and targeted emails/phone calls. CMRPC also introduced the project at a Quarterly Manager's Meeting in February 2016 and heard back from seven communities that were interested in participating. We selected three towns to be included in this project: Barre, Blackstone, and Charlton. Towns provided letters of interest to confirm their partnerships. The points of contact include two Town Administrators (Barre and Charlton) and one town planner (Blackstone) but the Town Administrator is an active participant.

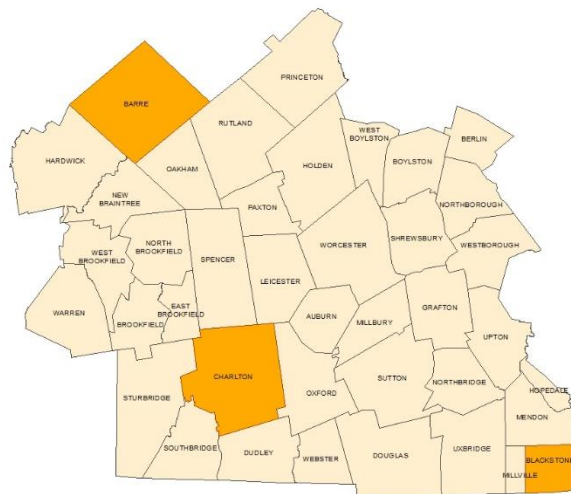


Figure 1: Participating Communities

## Technical Assistance

CMRPC engaged with a number of organizations and individuals to obtain technical assistance. CMRPC held a project kickoff with three community organizations, including Heywood Hospital, Montachusett Opportunity Council, and Pernet Family Health of Worcester. The organizations served in an advisory role and assisted with the project planning, identification of health indicators, and in the finalization of deliverables. In addition, the project team conducted two phone calls with Dillon Sussman of the Pioneer Valley Planning Commission (PVPC) and Halley Reeves of the Massachusetts Department of Public Health (MDPH), to receive recommendations on indicators development, healthy community design initiatives, and web-visualization tools.

## Indicator Development

Indicators were determined based on a combination of data collection and survey analysis. In March 2016, CMRPC distributed a survey via Survey Monkey to better understand the needs and concerns of the study towns related to health and the built environment. Users who completed the survey included the Town Administrators and the Blackstone Board of Health Chairman. The survey asked users to rate the towns' overall health and to identify key health issues, risky behaviors, and social/environmental determinants that have the greatest impact on the community's well-being. The goal of the survey was to identify the most pressing problems that can be addressed through municipal planning and community action. The survey can be viewed here: <https://www.surveymonkey.com/r/CMRPCIndicators2016>

The project team then collected and analyzed demographic, health-related, and spatial datasets from a number of sources including the U.S. Census Bureau, American Community Survey (ACS), Centers for Disease Control and Prevention (CDC), Behavioral Risk Factor Surveillance System (BRFSS), Massachusetts Department of Public Health (MDPH), Massachusetts Office of Geographic Information (MassGIS), Massachusetts Community Health Information Profile (MassCHIP), Massachusetts Department of Transportation (MassDOT), the Central Mass Grown. CMRPC staff also utilized transit and traffic data collected in-house by the Transportation Division to assess roadway conditions and transportation trends.

The selection of indicators depended on a variety of factors including availability of data, connection to existing health trends, and relationship to community goals and/or planned projects. In order for a data point to be determined as a valid indicator, the following questions<sup>3</sup> were asked:

- Can the indicator be measured? (i.e. is the data reliable and readily available?)
- Can the indicator be understood by the community?
- Does the indicator reflect a value widely held by community members?

<sup>3</sup> Adapted from the Cape Cod Sustainability Indicators Report. 2003. Online. <http://www.sustaincapecod.org/indicators>

- Can the indicator be linked to other social, economic and environmental issues?
- Does the indicator help inform existing and/or planned projects?
- Can an outcome be defined for the indicator?
- Can the indicator be influenced by changes in policy and/or individual behavior?

If all questions received a “yes” answer, the data point was deemed appropriate for indicator development. The project team also consulted with the technical advisers for further guidance and recommendations. Building on this, the project team analyzed all of the information obtained to finalize the set of indicators for each municipality specific to their community needs and assets.

## Location and Demographics

The Town of Barre is located in central Massachusetts and is bordered by Phillipston on the north, Hubbardston on the northeast, Rutland and Oakham on the southeast, New Braintree on the south, Hardwick on the southwest, and Petersham on the northwest. Barre is 22 miles northwest of Worcester and 61 miles west of Boston.

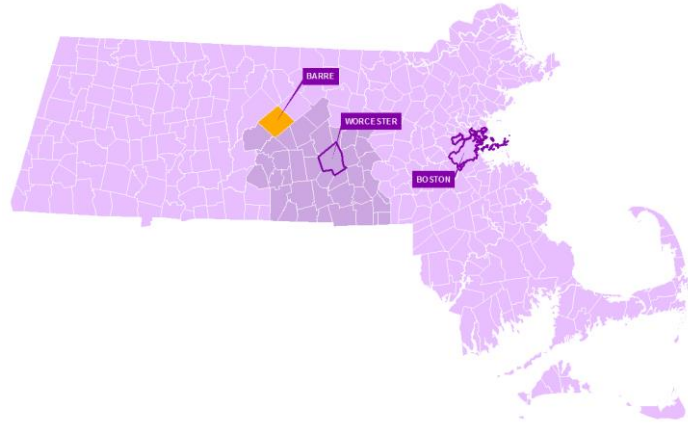


Figure 2: Regional Context

A rural community of 5,398 residents, Barre’s population grew by 5.6% between 2000 and 2010. The town encompasses a total of 44.61 square miles with land making up 99.37 percent of the area, and a density of 121 people per square mile.

Table 1. Demographic Information

	Participating Communities			Worcester County	State	National
	Barre	Blackstone	Charlton			
Population <sup>4</sup>	5,398	9,026	12,981	798,552	6,547,629	308,745,538
Unemployment <sup>5</sup>	6.1%	5.2%	4.4%	6.20%	5.8%	5.3%
Poverty Rate <sup>6</sup>	4%	5%	5%	11.60%	11.6%	11.3%
Minority <sup>6</sup>	2.2%	6.6%	2.5%	23%	28.2%	36.7%
Median Household Income <sup>6</sup>	\$66,250	\$72,699	\$42,538	\$65,453	\$67,846	\$53,046
Female Population <sup>6</sup>	50%	52%	51%	50.70%	51.6%	50.8%
Children <sup>6</sup>	26%	24%	25%	22%	20.6%	23.1%
Elderly (65+) <sup>6</sup>	14%	13%	13.3%	13.40%	14.4%	13.7%
High School Graduate <sup>6</sup>	94%	91%	94%	89.60%	89.5%	86.3%
Owner-Occupied Housing Units <sup>6</sup>	80.2%	68%	80.7%	65.20%	62.3%	64.4%
Renter-Occupied Units <sup>6</sup>	19.8%	32%	19.3%	34.80%	37.7%	35.6%

<sup>4</sup> Data are from the 2010 U.S. Census and are available at <http://www.census.gov/>

<sup>5</sup> Data are from the Bureau of Labor Statistics and are available at [www.bls.gov](http://www.bls.gov).

<sup>6</sup> Data are from the 2010 – 2014 American Community Survey and are available on American FactFinder at [http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_13\\_5YR\\_DP03&src=pt](http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_13_5YR_DP03&src=pt) and [http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_13\\_5YR\\_DP05&prodType=table](http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_13_5YR_DP05&prodType=table)



## Survey Results

The survey results for Barre showed a strong need for improved transportation options throughout Town. Several infrastructure issues noted include: lack of a transit system, inadequate road and sidewalk infrastructure and accessibility, and lack of safe bike lanes on existing roads. The survey user expressed particular concern for senior citizens and those without transportation who have difficulty travelling to essential resources such as the grocery store or doctor's office.

Regarding community amenities, access to affordable and nutritious foods, availability of farmer's markets, and farmlands were all listed as assets enabling healthy eating throughout town. The availability of recreational facilities was also described as community asset. In addition, the need to expand existing healthy food efforts through the implementation of a community garden program was mentioned across all participating towns.

The identified social determinants of negative impact included exposure to crime, violence, and social disorder; lack transportation options; and socioeconomic conditions (i.e. concentrated poverty) that contribute to individual/family stress. The identified environmental determinants of negative impact include built environment/community infrastructure, physical barriers, and lack of recreational options for youth and teenagers.

### Top 3 Major Health Concerns:

- Substance Abuse
- Aging issues (arthritis, hearing/vision loss, etc.)
- Substandard Health Conditions

### Top 3 Risky Behaviors:

- Drug Use
- Resistance to Preventative Health Services (i.e. vaccines)
- Use of E-Cigarettes, Flavor Wraps, and Paraphernalia

Overall, the survey user rated Barre as a healthy community and noted the following as priority areas in planning for healthy and active living:

- ❖ Access to Transportation
- ❖ Implementation of the Massachusetts Department of Transportation (MassDOT) Complete Streets Program
- ❖ Access to Healthcare



Figure 3: Fresh Produce at the Barre Farmer's Market located at Grove St. N & Common St.



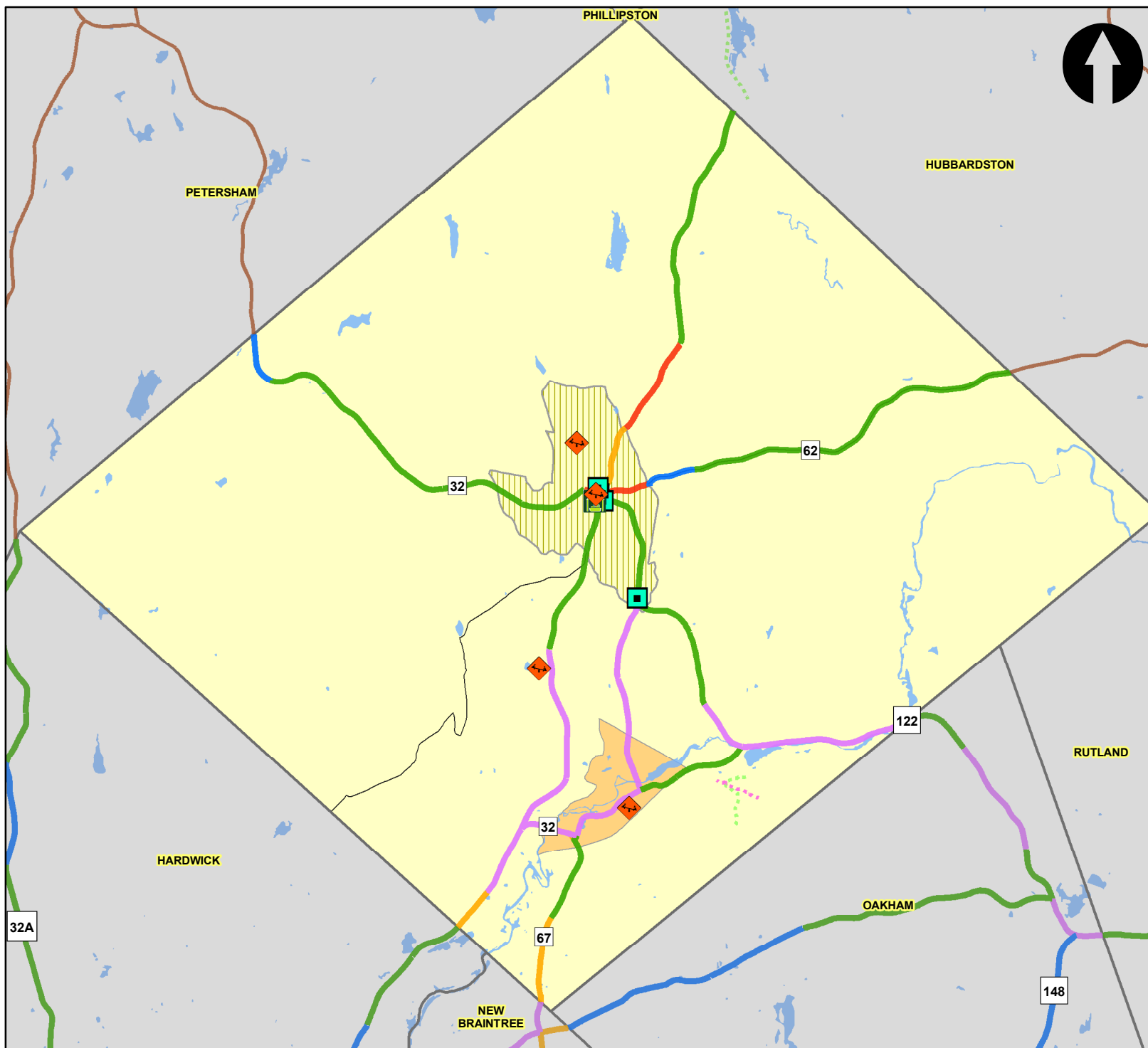
Figure 4: Barre Falls Dam reservation



Figure 5: Bike Lane example

# Map 1: Built Environment Factors in Barre, MA

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## Healthy Food/Active Living Resources

- Farmers Markets
- Winter Markets
- Fitness Centers
- Play Areas

## Built Environment Factors

### Pavement Condition

- Excellent
- Good
- Fair
- Poor
- Very Poor

### DCR Trails

- Forest Road/Trail
- Trail
- Other

### Water Bodies

### Open Space

- Full Public Access
- Limited Public Access

### Vulnerable Populations: Household Level

- HH with persons 75+ age (+18.8%)
- Low Income (-\$50,259)

### CMRPC Region Outline

Pavement conditions are measured along Federal-Aid eligible roadways.

Vulnerable Populations were calculated by CMRPC as part of the 2015 Mobility2040 Study. Vulnerable populations includes groups that are 150% above the CMRPC regional averages, as shown in parentheses.



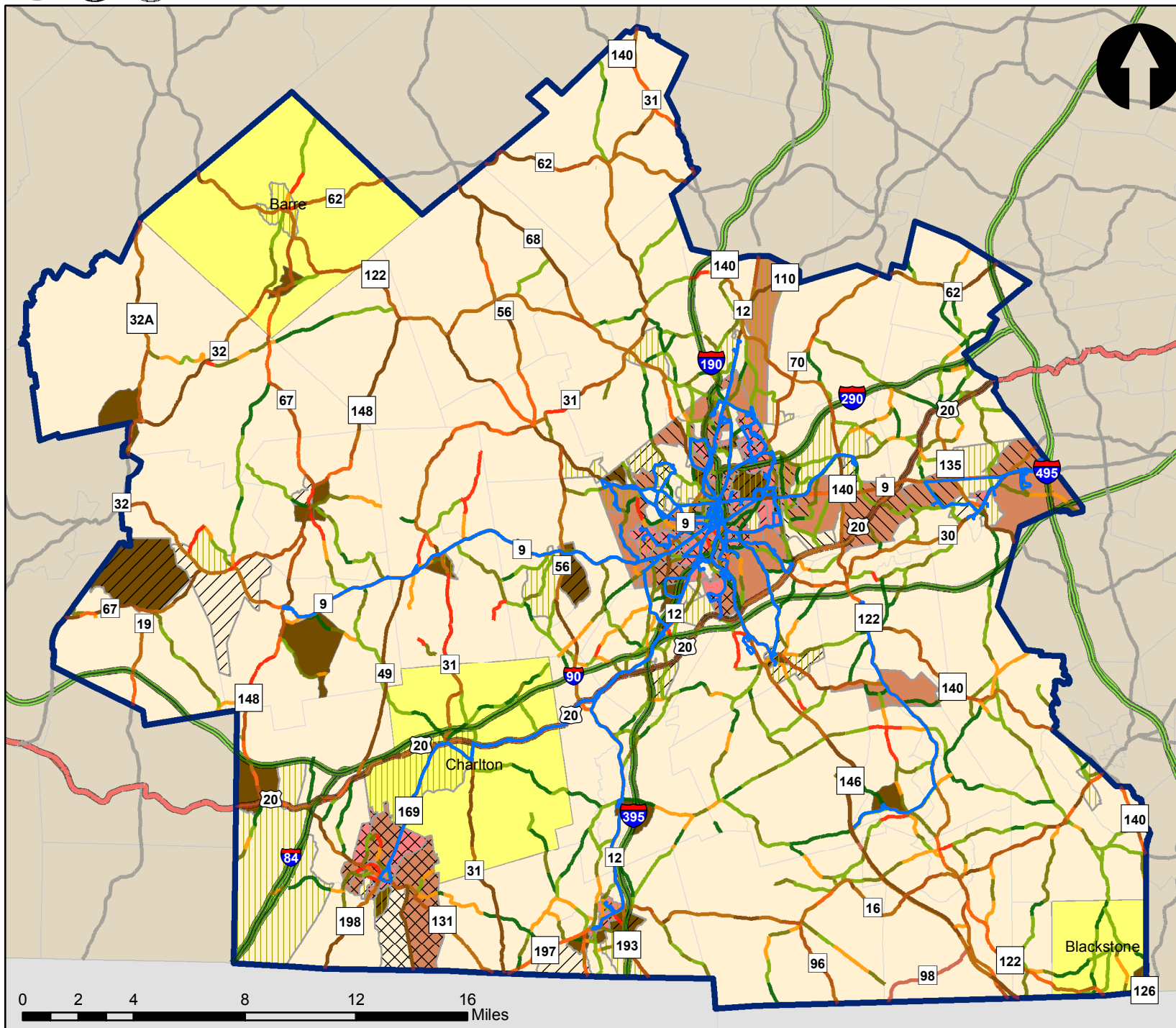
Information depicted on this map is for planning purposes only. This information is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analysis. Use caution when interpreting positional accuracy.

Participating towns: Barre, Blackstone, Charlton

This project was funded by the Massachusetts Association of Health Boards (MAHB) and the Massachusetts Department of Health (MDPH) 2016 Healthy Community Design & Mass in Motion Mini-Grant Program.



# Map 2: Transportation Vulnerability



## WRTA Routes



## Pavement Condition

- Excellent
- Good
- Fair
- Poor
- Very Poor

## Road Inventory

- Interstate
- U.S. Route
- State Route

## Vulnerable Populations: Household Level

- Zero Vehicle Households (+12.75%)
- Hispanic or Latino (+14.0%)
- Language Isolated Households (+9.45%)
- HH with persons 75+ age (+18.8%)
- Minority & Low Income
- Low Income (-\$50,259)
- Minority (+20.3%)

- CMRPC Region
- Participating towns

Pavement Conditions are measured along Federal-Aid eligible roadways.

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-  Play Areas
-  Farmers Markets
-  Winter Markets
-  Fitness Centers

## mRFEI\* Score by Census Tract








- | Color        | Score Range                                | Interpretation   |
|--------------|--|--|
| Red          | No healthy food outlet within census tract |  |
| Orange       | 0.1-5                                      |  |
| Light Orange | 5.1-10                                     |  |
| Light Blue   | 10.1-37.5                                  | *Modified Retail Food Environment  |
| Blue         | 37.5-100                                   | Lower mRFEI scores indicate census tracts with fewer healthy food outlets and many convenience stores and fast food restaurants. The mRFEI score is based on the ratio of the number of healthy food outlets to the number of health food outlets. |
| Grey         | Null Value                                 | See diagram below the legend for more information.   |

\*Modified Retail Food Environment Index (mRFEI)

Lower mRFEI scores indicate census tracts that contain many convenience stores and fast food restaurants compared to the number of healthy food retailers

See diagram below the legend for details on how the index score was calculated.

## Vulnerable Populations: Household Level

- |   |                                       |
|---|---------------------------------------|
|  | HH with persons 75+ age (+18.8%)      |
|  | Hispanic or Latino (+14.0%)           |
|  | Language Isolated Households (+9.45%) |
|  | Zero Vehicle Households (+12.75%)     |
|  | Low Income (-\$50,259)                |
|  | Minority (+20.3%)                     |
|  | Minority & Low Income                 |

Vulnerable Populations were calculated by CMRPC as part of the 2015 Mobility2040 Study. Vulnerable populations includes groups that are 150% above the CMRPC regional averages, as shown in parentheses.

# Road Inventory

-  Interstate  
 U.S. Route  
 State Route  
 Participating Towns  
 CMRPC Region Outline

$$mRFEI = 100 \times \frac{\# \text{ Healthy Food Retailers}}{\# \text{ Healthy Food Retailers} + \# \text{ Less Healthy Food Retailers}}$$

Information depicted on this map is for planning purposes only. This information is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analysis. Use caution for interpreting positional accuracy.

This project was funded by the Massachusetts Association of Health Boards (MAHB) and the Massachusetts Department of Health (MDPH) 2016 Healthy Community Design and Mass in Motion Mini-Grant Program.



## Discussion of Indicators

### Access to Transportation

**Goal → Engage with the Worcester Regional Transit Authority (WRTA) to establish a bus route through Town and improve existing means to ensure affordable and reliable transportation.**

#### Why is This Important?

Lack of access to transportation creates barriers to essential services including employment, health care, and nutritious foods. These barriers result in health disparities that traditionally isolate minority populations, low-income families, households in rural areas, and people with disabilities. Lack of transportation can lead to unemployment, delayed care, unhealthy diets, malnourishment, etc. Neighborhoods served by adequate transit access to more distant amenities connect residents to jobs, health care facilities, and other services throughout the community.

#### Indicators

- **WRTA Bus Routes**

The Town of Barre does not currently have a Worcester Regional Transit Authority (WRTA) bus route. As shown in Maps 1 and 2, Charlton is the only community among the three participating towns with a WRTA Route (#29) that passes through the community. The route can be depicted in blue and travels along Route 20 and Route 169.

- **Miles of Bike Lanes on Existing Roads**

This data is not yet available, however it is anticipated that this information will be collected as part of CMRPC's regional bicycle and pedestrian planning and pavement management efforts. This inventory will include the location of bike lanes along federal-aid eligible roads as well as descriptive information such as width and general condition. Data collection efforts in Barre are anticipated to begin in summer 2017.

### Pavement Conditions

**Goal → Identify priority segments for pavement maintenance and/or repair to help support accessibility and mobility throughout Town.**

#### Why is This Important?

All roadways are in a constant state of deterioration because of time, weather, and traffic load. As a result, neighborhoods with inadequate road infrastructure and limited access to walkable streets present a major barrier to pedestrian activity and accessibility. Streets and highways without sidewalks and/or bike lanes discourage walking and/or biking. This contributes to unhealthy, sedentary lifestyles and obesity rates, putting individuals at serious risk for chronic illnesses such as diabetes.

#### Indicators

- **Pavement Conditions along Federal-Aid Eligible Roadways**

The key to having an efficient and effective pavement management program lies in the prioritization process. As depicted in Map 1, the pavement in Barre is overall in good to fair conditions (shown in green and purple lines). Fair conditions were noted along the southern half of town, along Route 32 and South Street, while segments in good condition were noted along West Street, South Street, and Summer Street. These areas contain transportation vulnerable populations, including senior citizens over 75 years of age and low-income households.



Segments along School Street North, Route 67, and Wheelwright Road were found to be in poor condition. There are a several road segments in very poor condition, particularly nearby the Town Common on Williamsville Road, Mechanic Street, Exchange Street, and Pleasant Street. These segments could be identified as priority areas for pavement maintenance. Priority segments can be used to inform decision makers choosing projects for the *Transportation Improvement Program (TIP)* and *Long-Range Transportation Plan*. It also assists with determining the most cost-effective strategies to address the region's deteriorating roadway conditions.

## Access to Parks

**Goal → Provide residents of all ages with safe, physical activity opportunities in parks and improve access to outdoor space to increase fitness and wellbeing.**

### Why is This Important?

Access to parks allows people to improve their health and wellness through interaction with nature and outdoor spaces. Physical activity opportunities (i.e. green exercise, personal and/or community gardening, and nature-based recreational activities) help combat overweight and obesity while promoting general wellness. This results in lower levels of illness and mortality, and improved quality of life. Trees and vegetation can also help mitigate climate, air, and water pollution impacts on public health. However, fees for use of recreational facilities and activities, neighborhood safety, and access to walkable spaces continue to be major challenges to active living.

### Indicators

- **Department of Conservation and Recreation (DCR) Roads and Trails**

The DCR Roads and Trails datalayer, provided by MassGIS, contains all legal roads and trails as identified by DCR staff and consultants on DCR DSPR properties. As depicted on Map 1, the trails in Barre are located within the Barre State Forest towards the southeastern part of town.

- **Open Space and Recreational Facilities**

As reported by MassGIS, open space data is represented in Map 1 in two colors. The darker green indicates open space with full public access and the lighter green indicates limited public access, which is defined as open space where “members only” have access to the space. The majority of open space in Barre is available with limited public access, particularly on the eastern part of town towards Rutland and Hubbardston which contains the Ware River Watershed. The Rutland Brook Wildlife Sanctuary is also an open space area with limited access, located on the northwestern part of town. Areas with full public access include the Barre Falls Project Area, the Barre State Forest, the Prince River Reserve, Racoon Hill, Moose Brook, and the Quabbin Regional High School area, which is available for recreational activities.

- **Number of Parks within Half-Mile**

The American Association of Retired Persons (AARP) Livability Index is a web-based tool created by the AARP Public Policy Institute used to track community livability across seven categories: housing, neighborhood, transportation, environment, engagement, and opportunity. Livability is measured at the neighborhood level on a scale of 0 to 100, with higher values illustrating greater livability for people of all ages.

Collectively, the town of Barre has an AARP Livability score of 51, indicating a slightly above average rating of livability across town. In regards to distances to parks, Barre received a score of 0.0, the same value as the average US neighborhood. This value indicates that the number of parks within a half-mile of neighborhoods is extremely limited or nonexistent. Additionally, the Town of Barre currently has no policy towards a commitment of livability, whereby state and local plans are aimed at creating age-friendly communities, as defined by the AARP Livability Index.

## Physical Activity

**Goal** → *Establish pedestrian friendly and walkable neighborhoods by ensuring safe, equitable access to physical activity opportunities for people of all ages.*

### Why is This Important?

Insufficient physical activity is a risky behavior associated with overweight and obesity, which may lead to preventable chronic illnesses. According to the CDC, regular and adequate participation in physical activity offers a wide range of health benefits such as reduced risk of cardiovascular disease, weight control, strengthening of bones, and improved mental health<sup>7</sup>.

### Indicators

- **Walk Trips per Household**

Healthy transit options, such as walking and/or biking, provide residents with convenient, accessible, and low-cost alternatives to public transit and driving. Table 2 shows the number of estimated walk trips per household per day measured at the neighborhood scale by the AARP Livability Index. Barre has a value of 0.55, which is approximately 18% less than the average US neighborhood. However, Barre's score is in line with Blackstone and Charlton suggesting that these towns are somewhat walkable areas.

Table 2. Estimated Walk Trips per Household per Day (AARP Livability Index)

Geographic Location	Score
Barre	0.55
Blackstone	0.61
Charlton	0.61
Median U.S. Neighborhood	0.73

- **Adult Participation of Regular Physical Activity**

Individuals who participate in regular physical activity and eat nutritious foods have a better quality of life and are less likely to develop preventable chronic illnesses.

Table 3 represents the percentage of adults lacking regular physical activity over a five-year average, as calculated by the BRFSS. Approximately 44% of residents in Blackstone reported lacking regular physical activity, compared to 49% in Charlton, 50% in Worcester County, and 48% across the state. There was no data available for Barre.

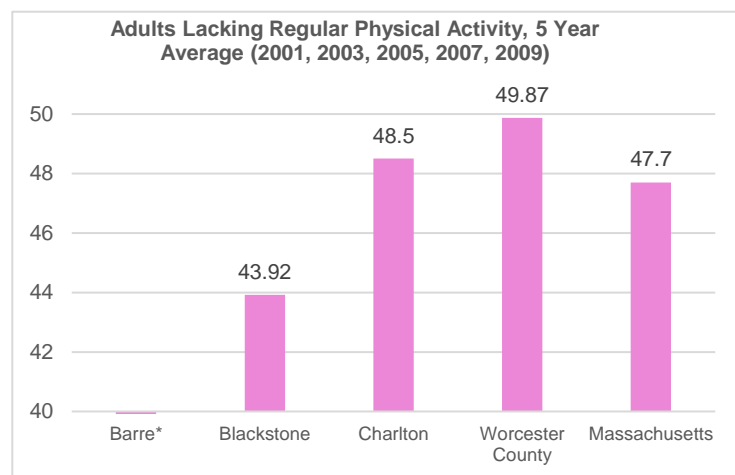


Table 3. Adults Lacking Regular Physical Activity on 5-Year Average (BRFSS)

<sup>7</sup> "Physical Activity." Centers for Disease Control and Prevention (CDC). Web. <https://www.cdc.gov/physicalactivity/basics/pa-health/index.htm>

- **Fitness Centers**

CMRPC collected locational data of both public and private fitness centers for each community via Yellow Pages and geo-coded the locations. As shown in Map 1, Barre currently has four fitness centers in Town, three of which are located around the Town Common on Exchange Street, Cat Alley, and Broad Street. There is also a facility located on Summer Street along Route 32.

- **Play Areas**

CMRPC collected locational data of play areas via <http://mapofplay.kaboom.org> for each community, confirmed the data with the towns' DPW Departments, and geo-coded the locations in ArcGIS. Play areas refer to indoor and outdoor spaces designed for children and youth to participate in recreational activities. Barre has four play areas within the town boundary, including Rice Park located on School Street, High Plains Field located on High Street in South Barre, and a playground at Ruggles Lane Elementary School. While the Quabbin Regional High School<sup>8</sup> does not offer a playground, the campus is equipped with amenities for students to participate in physical activity, including one outdoor track, one cross-country course, and five athletic and/or sports fields.

## Overweight and Obesity

**Goal → Reduce the prevalence of adult/childhood obesity and chronic disease by increasing physical activity opportunities in schools, businesses, and outdoor spaces while decreasing exposure to high-calorie intake or unhealthy foods.**

### Why is This Important?

Diet and body weight are directly linked to individual health status. According to Healthy People 2020, obesity is a major risk factor for high-cost, preventable chronic diseases such as hypertension, asthma, type II diabetes, heart disease, strokes, and some cancers<sup>9</sup>. Weight gain also impacts mental health and wellbeing, which may increase the risk of stress, depression, social detachment, and suicide.

### Indicators

- **Adult Obesity**

As our society is becoming increasingly sedentary, the rates of obesity in the nation are rising. Table 4 represents the prevalence of obesity among Massachusetts adults as calculated by BRFSS. The data compares obesity rates on a three-year average between the participating towns, Worcester County, and Massachusetts. Approximately 22% of adults in Barre are considered obese, a percentage similar to those across Massachusetts. Compared to the other participating towns, there are less obese adults in Barre than in Blackstone and Charlton.

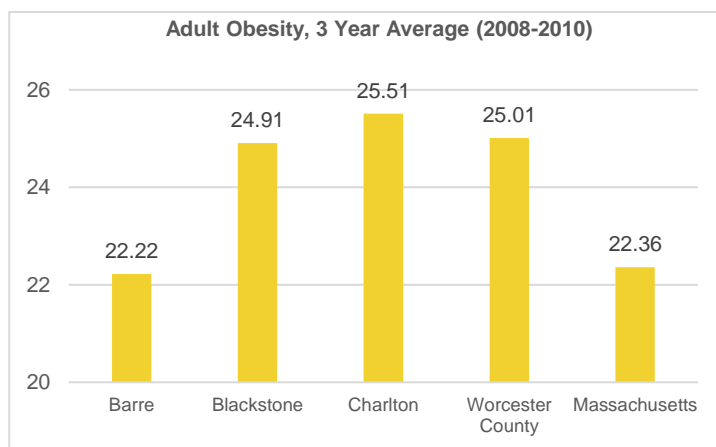


Table 4. Percent of Adult Obesity on a 3-Year Average (BRFSS)

<sup>8</sup> The Quabbin Regional High School is located in Barre and serves students in grades 9 – 12 from the towns of Barre, Hardwick, Hubbardston, New Braintree and Oakham as well as school choice students from surrounding towns.

<sup>9</sup> "Nutrition and Weight Status." Healthy People 2020. U.S. Dept. of Health and Human Services, Office of Disease Prevention and Health Promotion. Online. <https://www.healthypeople.gov/2020/topics-objectives/topic/nutrition-and-weight-status>



## Nutrition

**Goal →** *Ensure all people in town have equal access to nutritious foods and produce by connecting local farmers to corner store initiatives, community gardens, and/or mobile grocers; and implement educational shopping/cooking programs in schools to encourage healthy food decision-making.*

### Why is This Important?

Limited access to and high costs of healthy foods are major barriers to active living for underserved groups such as low-income, minority, single-family households, elderly, and disabled populations. These individuals often live in food insecure locations that inhibit them from accessing local fruits and vegetables. As a result, alternative food options may result in unhealthy items found in gas stations, fast-food restaurants, and grocers. Although all Towns noted in the survey that the availability of nutritious/local produce was not a major barrier to healthy eating, there are still groups that are disproportionately affected due to high food costs and lack of transportation.

### Indicators

- **Food Deserts**

The Modified Retail Food Environment Index (mRFEI)<sup>10</sup> is a composite measurement of the retail food environment and represents the percentage of healthy food vendors located within a 0.5-mile buffer of a Census Tract. The mRFEI score indicates the number of healthy food retailers divided by the number of healthy and less healthy food retailers, providing an index score of the balance of healthy to non-healthy food resources. The lower the mRFEI score, the more convenience stores and fast food restaurants (and less healthy food resources) that are present in that area.

The Town of Barre has an mRFEI score of 20 in Census Tract 25027722100 (see *Map 3: Healthy Food and Fitness Resources*). This score indicates that access to healthy foods such as fruits and vegetables, low-fat dairy items, meat products, and whole grain foods is at a moderate level across town. This is compared to statewide average of 7 and 5 for impoverished tracts. Other towns that received moderate scores (10.1-37.5) within the CMRPC region include: North Brookfield, Spencer, Leicester, Millbury, Auburn, Webster, Boylston, Northborough, Mendon, and Northbridge.

- **Adults Consuming Five or More Fruits and Vegetables per day**

Regular fruit and vegetable intake contributes to an overall healthy diet. Table 5 depicts the percentage of adults consuming five or more fruits and vegetables per day in Massachusetts on a three-year average, as calculated by the BRFSS. The table shows the percentage of adults consuming five or more fruits and/or vegetables per day, on the scale of a three year average, with a comparison between the three participating towns, Worcester

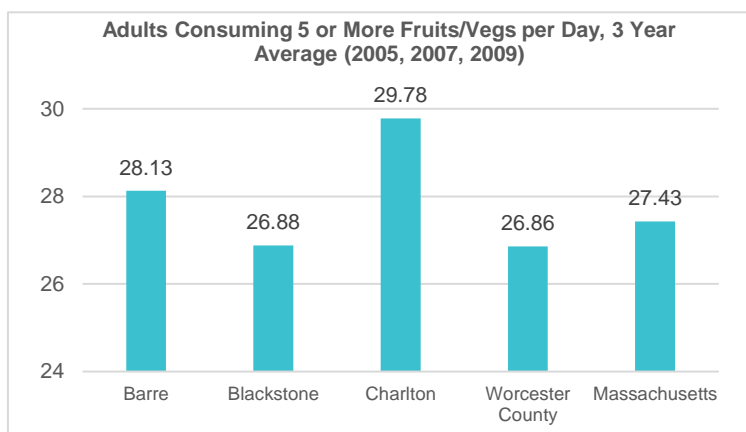


Table 5. Adult Daily Intake of Fruits/Vegetables on a 3-Year Average (BRFSS)

<sup>10</sup> Census Tract Level State Maps of the Modified Retail Food Environment Index (mRFEI). Atlanta, GA: National Center for Chronic Disease Prevention and Health Promotion, Division of Nutrition, Physical Activity, and Obesity, 2012. Web. [ftp://ftp.cdc.gov/pub/Publications/dnpao/census-tract-level-state-maps-mrfei\\_TAG508.pdf](ftp://ftp.cdc.gov/pub/Publications/dnpao/census-tract-level-state-maps-mrfei_TAG508.pdf)

County and the State of Massachusetts. The percentage of adults in Barre who are consuming five or more fruits and/or vegetables is a little over 28% and remains slightly higher than the average of Worcester County.

- **Farmer's Markets**

The data shows the locations of Farmers Markets and Winter Markets across Central Massachusetts, as provided by the Central Mass Grown, a community-based organization of farmers and buy local advocates. This data was adapted from the existing farmer's market layer from MassGIS, and modified to include additional markets in the central mass region that were not part of the initial analysis. The markets are the only measurement of available healthy food options for this project.

Barre currently has one farmer's market located on the Town Common at the intersection of Grove Street North and Common Street. The market is typically open from May 2 to October 31 on Saturdays at 9:00 am to 12:00 pm. Vendors at the Farmers Market accept a variety of payment methods including: cash, checks, Barre Food Pantry bucks (Barre Bucks), Women Infants and Children (WIC) and Elder cards, and Supplemental Nutrition Assistance Program (SNAP). The market also accepts food donations for the Barre Food Pantry.

## Next Steps and Recommendations

Table 6. Recommendations and Strategies to Ensure Community Livability

What Can We Do?	
RESIDENTS	MUNICIPALITIES
<ul style="list-style-type: none"> <li>• Volunteer and serve on local boards and committees including Open Space and Recreation Plan Committees and Master Plan Committees</li> <li>• Participate in the Safe Route's to School Program</li> <li>• Attend Town Meeting as well as meetings of local boards and committees such as the Planning Board to ensure that your voice is heard on matters related to transportation, healthy eating and active living</li> <li>• Support local farms by buying local whenever possible.</li> <li>• Assist with local community projects such as community gardens.</li> </ul>	<ul style="list-style-type: none"> <li>• Increase bus service to areas of need. Resources include Central Massachusetts Metropolitan Planning Organization (CMMPO) and Worcester Regional Transit Authority (WRTA).</li> <li>• Continue to implement the Complete Streets Program in partnership with CMRPC.</li> <li>• Participate in the Mass Safe Routes to School Program to increase sidewalk connectivity and safety around schools.</li> <li>• Continue to participate in the Worcester Bike Rack Program in partnership with CMRPC.</li> <li>• Ensure the town has an updated Open Space and Recreation Plan and Master Plan and ensure that a public health advocate serve on the committee for each plan. CMRPC is available to assist with coordinating and writing these plans.</li> <li>• Revise zoning regulations to remove barriers to agriculture, promote walkable smart growth development, encourage mixed-use districts, and reduce parking requirements. Consider adopting a version of the Model Village Center by-law, which CMRPC can assist with.</li> <li>• Develop a sidewalk inventory and maintenance program</li> <li>• Conduct a connectivity study to connect open space and critical health resources.</li> <li>• Improve design of existing open space and municipal buildings to encourage walkability. For example, allow the stairs to be easily accessible to residents.</li> <li>• Work with Central Mass Grown to increase fresh produce retail and distribution.</li> <li>• Facilitate and establish joint use agreements and public-private partnerships between communities and areas of local open space including schools and local gyms.</li> <li>• Encourage the use of local produce in schools and in local convenience stores.</li> </ul>