Massachusetts Pedestrian Transportation Plan

Deliverable 1: Establishing Context for the Plan

Revised September 12, 2016

Contents

1 Introduction

In the nearly 20 years since the last statewide pedestrian plan, several shifts in US society are noticeable:

- Per capita vehicle miles traveled are decreasing, both nationally and in Massachusetts.[i,ii]
- Fewer teenagers are getting their drivers licenses.
- The ease with which people can use on-demand transportation services like Uber and Lyft is lessening the need for private vehicle ownership.
- Automated vehicle technology, specifically, crash avoidance systems, are becoming more common on new cars; fully autonomous vehicles are on the horizon.
- Real estate studies are showing a shift from single family homes to multi-unit buildings, and suburban populations are growing faster than urban ones.[iii]

Since the 1998 Massachusetts Pedestrian Plan, there have been significant advances in planning and design for walking, both nationally and in Massachusetts. Complete Streets and research into the health benefits of active transportation, particularly walking, have been well established and are now being actively promoted through initiatives such as the US Surgeon General's Call to Action to Promote Walking and Walkable Communities (known as "Step it Up!"). There is renewed attention to safety for walkers, the most vulnerable of travelers, through the US DOT's "Safer People, Safer Streets Initiative" to increase focus on non-motorized safety issues and help communities create safer, better connected bicycling and walking networks.

Additionally, approaches to engineering and design (through efforts such as Vision Zero) are focusing on crash severity to reduce injuries and fatalities, not just the overall number of crashes. There has been significant research into crash reduction factors (CRFs) and crash modification factors (CMF), as documented by the Federal Highway Administration (FHWA) in the *PedSafe Pedestrian Safety Guide and Countermeasure Selection System*, and the *Crash Modification Factors Clearinghouse*. This critical research now provides meaningful information on how to effectively reduce pedestrian crashes.

In Massachusetts, the 2006 *Project Development and Design Guide* changed traditional approaches to transportation planning and design in the Commonwealth by making multimodal design the norm, and requiring a design exception when all users could not be accommodated. More recently, Massachusetts Safe Routes to School, the Complete Streets funding program, the Community Compact, and many others which will be described in this memorandum, are continuing to plan and fund the Commonwealth's multimodal transportation system.

To update this Plan, the Massachusetts Department of Transportation (MassDOT) worked with stakeholders to develop a vision and goals.

Vision

Massachusetts' integrated and multi-modal transportation system will provide a safe and well-connected pedestrian network that will increase access for both transportation and recreational purposes.

Core Goals of the Plan

I. Improve Accessibility - Improve mobility and connectivity to major community services, housing and employment centers with an emphasis on changing demands, underserved communities, healthy transportation options, and connections to transit.

II. Improve Safety – Provide guidance on state of the practice in policy, design, implementation, enforcement, and evaluation of safer pedestrian environments.

III. Improve Maintenance - Identify policies and model practices to improve maintenance, year-round usability and state of good repair of existing and planned pedestrian infrastructure.

IV. Prudent Investment - Develop a prioritized investment strategy that supports our goals and complements robust regional pedestrian planning efforts; and, provide a business case based on economic and public health data that inspires municipalities to invest in walking environments.

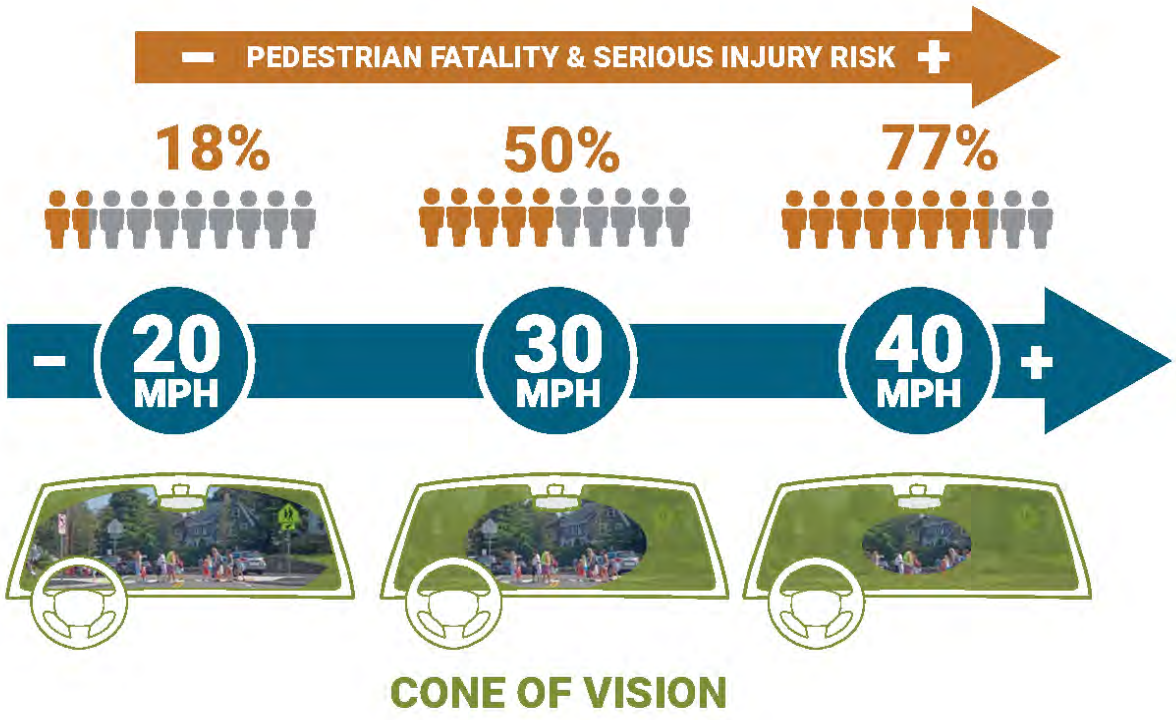
Organization

This memorandum considers the context from which the Massachusetts Pedestrian Transportation Plan ("the Plan") will be developed. It is important to identify the implications of the contextual pieces, how the Plan can build on them, how the Plan's goals are supported by them, and what other initiatives may be needed in Massachusetts to realize the vision.

The memorandum begins with a discussion of approaches for reducing pedestrian injuries and fatalities, followed by an overview of state-level trends in walking to establish how the Commonwealth stands compared to the rest of the US. State and regional population projections for 2040, the planning horizon for this Plan, are described, followed by a summary of statewide initiatives since the last Massachusetts Pedestrian Plan. Finally, there is a high-level discussion of how walking infrastructure and initiatives are funded in Massachusetts, and then the memorandum concludes with a description of the local and statewide advocacy groups that are advancing walking and health.

2 Improving Pedestrian Safety

Figure 1: Pedestrian Risk of Being Injured or Killed by a Vehicle According to Speed[iv]



Safety is one of the core goals of the Plan, and also overlaps with the other three goals of accessibility, maintenance, and prudent investment. Reducing vehicle speeds is widely viewed as the most important strategy to reduce severe injury or death for pedestrians, other vulnerable road users, and other motorists. As shown in Figure 1, the risk of injury or death for pedestrians increases significantly with vehicle speeds. Nearly 8 in 10 pedestrians will sustain a serious injury or be killed when hit by a vehicle travelling 40 mph.

The Governors Highway Safety Association (GHSA) noted in March 2016 a startling increase in pedestrian fatalities for the first six months of 2015 alone. The preliminary data estimated that 2,368 pedestrians were killed in the first half of 2015, a 10% increase over the same time period the prior year. Based on the preliminary data, Massachusetts is expected to have a 26% increase in pedestrian fatalities from the first half of 2014 to the first half of 2015. WalkBoston noted that there were 11 pedestrian fatalities in January 2016 alone.

This section describes the approaches that MassDOT and others are taking to improve safety and reduce pedestrian injuries and fatalities. This section first explains MassDOT's Speed Limit Traffic Control Program, then describes a recent FHWA informational study on speed limit methods, discusses MassDOT's specific pedestrian safety efforts, introduces Vision Zero and new research into crash reduction factors, and notes the potential for automated vehicle technology to reduce conflicts.

2.1 MassDOT's Speed Limit Traffic Control Program

As a state DOT, MassDOT's policy, through its Speed Limit Traffic Control Program is "to provide appropriate and enforceable speed limits on all paved streets and highways within the Commonwealth in the best interest of the motoring public's right to use a roadway in a reasonable and proper manner. The ideal speed limit is both acceptable to the prudent driver and enforceable by police."

Statutory Speed Limits

Chapter 90, Section 17 of the Massachusetts General Laws dictates statutory speed limits in the absence of official speed postings made under Chapter 90, Section 18. In other words, if a speed limit has not been established under Chapter 90, Section 18 (which requires the posting of speed limits according to a special speed regulation resulting from of an engineering study), the roadway can be enforced according to Chapter 90, Section 17 (no speed signs posted). The statutory speed limits are:

- 20 mph in a school zone;
- 30 mph in a thickly settled or business district for a distance of 1/8 of a mile;
- 40 mph on an undivided highway outside of a thickly settled or business district for a distance of 1/4 of a mile; and
- 50 mph on a divided highway outside of a thickly settled or business district for a distance of 1/4 of a mile.

Since roads with the highest pedestrian activity tend to be in thickly settled or business districts, these roads generally have a statutory speed limit (i.e., absent a posted speed limit) of 30 mph.

School Zones

Per the Massachusetts Amendments to the 2009 Manual on Uniform Traffic Control Devices, "A School Zone as referred to in Chapter 90, Section 17 shall only be construed to be that section of a way which abuts the grounds of a school and is posted and marked in accordance with these Department Standards to indicate the applicability of the statutory speed limits of twenty miles per hour for all vehicles in accordance with the terms of the permit for the Zone." (See page 66.)

Establishing Posted Speed Limits

There has long been a call for lowering speed limits along streets with high pedestrian activity or other land uses for which high-speed traffic raises safety or other concerns. To ensure consistency, Chapter 90, Section 18 requires posted speed limits to be established through the issuance of special speed regulations. On state highways, MassDOT is responsible for conducting an engineering study to establish a speed regulation. On municipal roadways, the municipality, usually in conjunction with MassDOT, collects data for the engineering study needed to establish a speed regulation. The MassDOT Traffic Engineering Section reviews this data and prepares a speed regulation for approval by the Highway Division and the Registry of Motor Vehicles. Municipalities must also approve speed regulations for municipal roadways. The process is outlined in MassDOT Procedures for Speed Zoning on State and Municipal Roadways. This process outlines limited circumstances under which a speed regulation may be lower, stating:

On sections of highways having a high accident experience, the zone speed may be lower than the 85th percentile speed, but in no case more than 7 miles per hour lower. This should be considered more as an exception than the rule, and should be done only where enforcement agencies will ensure consistent enforcement which will increase the effectiveness of the zone to an acceptable level of conformance.

MassDOT applies the lower speed limit to roads with crash rates higher than the statewide average for the same functional class and to roads with high pedestrian activity. In general, speed limit adjustments tend to be more prevalent in communities in the eastern half of the state.

Much to the dismay of those seeking to see speed limits lowered, because the procedures governing speed zoning are tied to the 85th percentile speed, many speed studies yield a safe speed range higher than the statutory speed limit. In other words, a road that statutorily is set at 30 mph may see an 85th percentile speed of 35 or 40 mph based on actual observations, resulting in a higher posted speed.

2.2 FHWA/ITE Speed Limit Methods Study

In 2012, the Federal Highway Administration (FHWA) published an Institute of Transportation Engineers (ITE) study, Methods and Practices for Setting Speed Limits: An Informational Report. The abstract states, "This informational report describes four primary practices and methodologies used in establishing speed limits (engineering approach, expert systems, optimization, and injury minimization)." As an informational report for broad national application, most of the report focuses on setting speed limits on functional classes of roads with higher speeds (i.e., limited access highways and other high-capacity roadways).

A different approach to establish speed limits, which is particularly relevant to pedestrian safety, is the injury minimization approach, developed in Australia and described below. Another approach is to ensure that street design reflects the preferred speed limit; for example, a street in a thickly settled area should be designed for a low speed and not accommodate anything higher. Otherwise the higher speeds encouraged by the design will impact the 85th percentile and, in turn, the posted speed limit might be raised accordingly.

Injury Minimization Approach

Using the injury minimization or safe system approach, "speed limits are set according to the crash types that are likely to occur, the impact forces that result, and the human body's tolerance to withstand these forces."[v]

The cornerstone of the injury minimization approach to setting speed limits is the tolerance of the human body to injury during a crash. It is based solely on a road safety platform and takes the position that it is unethical to create a situation where fatalities are a likely outcome of a crash in order to reduce delay, fuel consumption, or other societal objectives.

The principal challenge in an injury minimization approach to speed limits is to manage crash energy so that no user is exposed to impact forces capable of causing death or serious injury. Thus vehicles cannot legally travel at speeds where, in the event of a crash, the release of kinetic energy can produce a serious or fatal injury. Under the current road system and vehicle fleet, this would limit speeds to those shown in Table 1.

Table 1: Speed Limits for Injury Minimization

Road type	Speed Limit, mph (km/h)
Roads with a mix of motorized and unprotected road users (i.e., pedestrians and cyclists)	20 (30)
Roads with uncontrolled access where side impact crashes can result	30 (50)
Undivided roads where head-on crashes can result	45 (70)
Controlled access facilities with a physical median separation, where at-grade access and non-motorized road users are prohibited	>60 (>100)

Based on 2011 research by J. Langford, Monash University Accident Research Centre

A safe system strategy does not imply that crashes are caused solely (or even mainly) by speed and it recognizes that any given crash event is likely to be the result of an interplay of many factors. Accordingly, a safe system approach requires that all aspects of the system work together for the safest possible outcome, with speed representing but one component, albeit a critical one.

Adopting such an approach would serve as the basis for establishing lower speed limits (i.e., 20 mph) on roads with a mix of motorized and unprotected road users. However, the report points out that implementing such an approach would be problematic, stating:

> *The injury minimization approach to speed limit setting results in speed limits that are lower than those traditionally used in North America (which are generally set by engineering and expert system methods). Thus implementing an injury minimization approach to speed limits would be problematic. The road authority cannot simply lower the speed limit and expect immediate or substantial compliance. Drivers are unlikely to fully respond except in the face of almost constant enforcement. (Excerpted from pages 22-23)*

The report emphasizes the importance of speed limits being "credible for the driving population" stressing the importance of making the road "more 'self-explaining' through traffic control devices, publicity and education campaigns, and reconstruction where required, and [building] a case over time for a new paradigm as to what is regarded and legislated as a safe speed limit for the street network."

2.3 MassDOT Pedestrian Safety Initiatives

Bicycle and Pedestrian Safety Awareness and Enforcement Program

In 2014, MassDOT began the *Bicycle and Pedestrian Safety Awareness and Enforcement Program* using just under $500,000 in FHWA safety funds to support RPA-municipal partnerships in 12 communities. The program is consistent with MassDOT's Healthy Transportation Policy Directive to increase walking and reduce pedestrian fatalities and injuries. Police departments receive funding to increase enforcement and improve safety awareness for motorists, bicyclists, and pedestrians.

Massachusetts Strategic Highway Safety Plan (2013)

The *Strategic Highway Safety Plan* is a comprehensive safety plan and a coordinated framework for reducing fatalities and serious injuries on the State's surface transportation network. The plan adopted the following objectives to reduce pedestrian fatalities and hospitalizations using 2011 as the baseline:

- Reduce five-year average pedestrian fatalities by 20% (from 64 to 51) by 2017.
- Reduce five-year average pedestrian hospitalizations by 20% (from 720 to 576) by 2017.

Strategies outlined in the plan include:

- Provide training and technical assistance to improve the design and engineering of pedestrian facilities.
- Educate the public on pedestrian safety.
- Integrate pedestrian safety activities with other plans.
- Incorporate changes precipitated by new directives related to healthy transportation.

2.4 Vision Zero

Vision Zero is a strategy to eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, and equitable mobility for all. First implemented in Sweden in the 1990s, Vision Zero has proved successful across Europe — and now it is gaining momentum in major American cities.

The basic premise of Vision Zero is that most crashes are due to human error. Therefore, streets should be designed so that such crashes are not fatal. According to the World Health Organization[vi], Vision Zero is founded on four principles:

- Ethics: Human life and health are paramount and take priority over mobility and other objectives of the road traffic system;
- Responsibility: providers and regulators of the road traffic system share responsibility with users;
- Safety: road traffic systems should take account of human fallibility and minimize both the opportunities for errors and the harm done when they occur; and
- Mechanisms for change: providers and regulators must do their utmost to guarantee the safety of all citizens; they must cooperate with road users; and all three must be ready to change to achieve safety.

Vision Zero Boston

In 2015, the City of Boston launched Vision Zero Boston, "[A] commitment to focus the city's resources on proven strategies to eliminate fatal and serious traffic crashes in the city by 2030," by promising action in in four critical areas:

1. Reducing speeds and building safer streets.
2. Tackling distracted and impaired driving.
3. Engaging Bostonians with Vision Zero.
4. Holding ourselves accountable for results.

In addition to Vision Zero Boston, the City of Cambridge adopted Vision Zero in 2016.

2.5 Crash Reduction Factors and Crash Modification Factors

Through a comprehensive study of crash types and countermeasures, FHWA developed the *PedSafe Pedestrian Safety Guide and Countermeasure Selection System.* This valuable new data and the associated tool organizes the findings into 12 crash types and eight performance objectives to assist practitioners in identifying the most effective countermeasure for a given situation. Similarly, the FHWA's *Crash Modification Factors Clearinghouse* assists with estimating the effect that a countermeasure will have on reducing crashes by type and severity.

2.6 Automated Vehicle Technology

While driverless vehicles are still far from widespread implementation, crash avoidance technology is quite common on many newer vehicles. For pedestrian-vehicle crashes, researchers acknowledge that the pedestrian detection systems could be strengthened. The US DOT Intelligent Transportation Systems Joint Research Office notes that:

> *For the past decade, the USDOT has been researching and testing a system of vehicles that can sense the environment around them and communicate that information to other vehicles, infrastructure, and our personal mobile devices. This connected vehicle communication will enable safety, mobility, and environmental advancements that current technologies are unable to provide. The technology is expected to reduce unimpaired vehicle crashes by 80%.*[vii]

In the very long term, autonomous vehicles will undoubtedly impact street design. Although it is too early to say how, there is potential for less space to be consumed by parking, which may be replaced by wider sidewalks, landscaping, and other features which will make walking even more pleasant.

2.7 Implications

- Newer approaches to safety, like the application of CRFs and CMFs, and Vision Zero, focus on reducing crash severity. Locations where injuries occur would take priority over locations that only see property damage, even if there are fewer incidents. The Plan will describe this shift in thinking, and connect practitioners with CRF and CMF resources to address specific crash types. The Plan will also note data collection strategies that may be needed to support these newer approaches.
- Vehicle speed is a critical factor in reducing pedestrian injuries and fatalities, and to creating walkable environments. The FHWA and others have recognized more appropriate and context-sensitive methods for setting speed limits than the traditional 85th percentile approach. The Plan will clearly explain the connection between vehicle speeds and pedestrian safety.
- The *Massachusetts Strategic Highway Safety Plan* is an important statewide plan that can be used to direct funding to pedestrian safety projects and programs. The Pedestrian Plan will be coordinated with the *Strategic Highway Safety Plan* to ensure consistency and connection to opportunities.
- MassDOT has taken several proactive initiatives to improve safety for vulnerable users, such as the *Bicycle and Pedestrian Safety Awareness and Enforcement Program.* The Plan will look at opportunities to build on existing initiatives like these that already have momentum.

3 State Trends in Walking

To support the accessibility goal of the Plan, an understanding of State trends in walking must be established. The Massachusetts Household Travel Survey indicates that on average, each person in Massachusetts takes 4.1 trips each day, whether related to work, school, shopping, or recreation. In 2010-2011, when the survey was conducted, 19.0% of these trips were made by walking.

According to the Alliance for Biking & Walking's 2016 Benchmarking Report, walking in Massachusetts is increasing, unlike in the country as a whole where it is in decline. From 2006 to 2014, commuter rates of walking in Massachusetts increased from 4.2% to 4.9% compared to an overall United States total decline in walking from 2.9% to 2.7% (American Community Survey (ACS) 2006 and 2014, 1-year estimates). According to the Massachusetts Household Travel Survey, 24.3% of all trips are for commuting.

In 2014, males made up 48.8% of Massachusetts walking commuters and females 51.2%. The U.S. breakdown was 53.9% males and 46.1% females. (Figure 2)

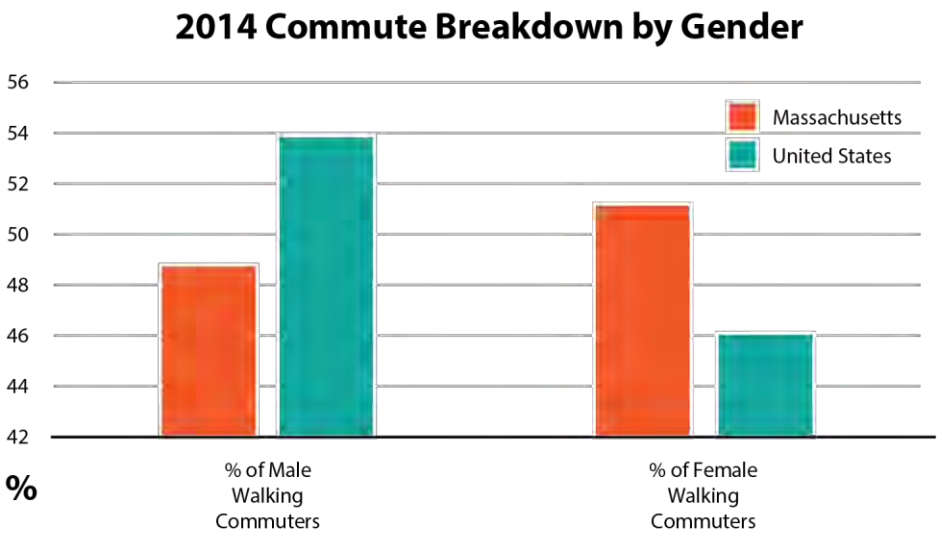


Figure 2: 2014 Commute Breakdown by Gender (ACS 2014)

As in most states, Massachusetts commuters with low income represent a higher percentage of those who walk and use public transit than their representation within the total commuter population. (See Table 2 and Figure 3.)

Table 2: Percent of Walking, Transit, and All Commuters who are Low Income

	MA	U.S.
% of walking commuters who are low income:	22%	31%
% of transit commuters who are low income:	15%	22%
% of all commuters who are low income:	9%	14%
Source: (ACS 2013, 3-year estimate)		

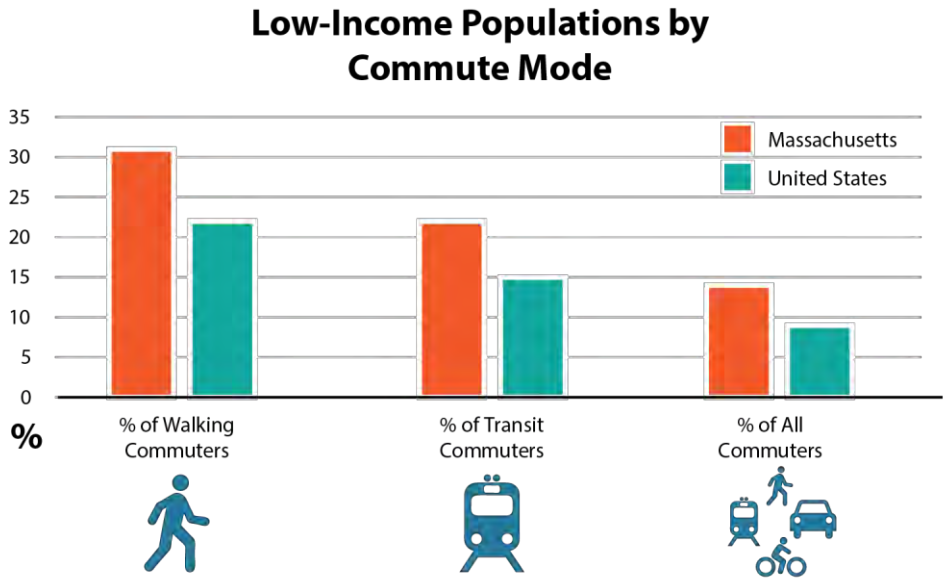
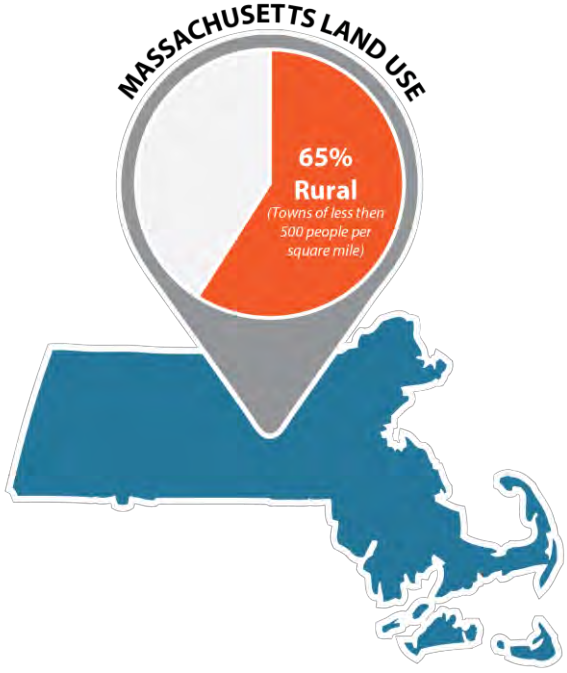


Figure 3: Low Income Populations by Commute Mode

3.1 Density

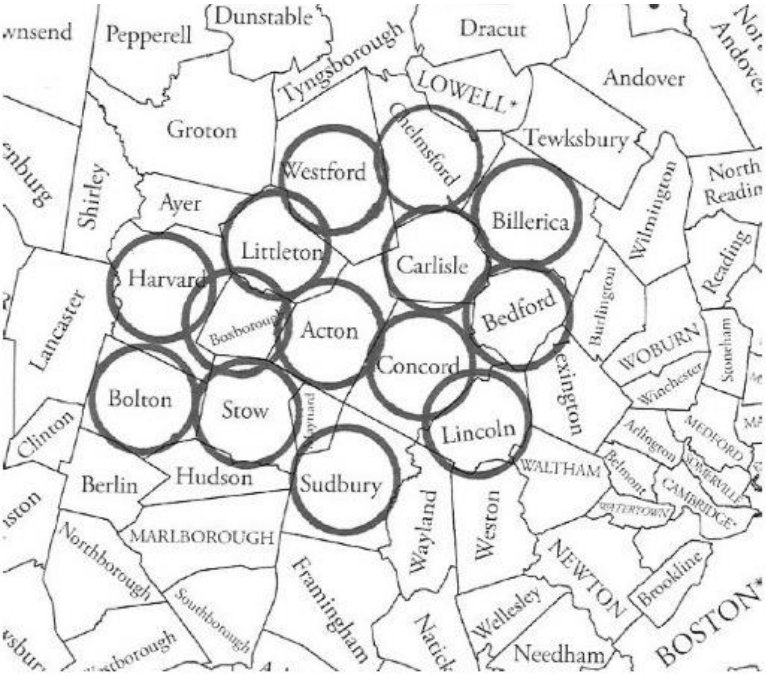
According to WalkBoston, densities of less than 500 persons per square mile are considered "rural." By this measure, 190 of the 351 towns in Massachusetts are predominantly rural. These predominantly rural communities represent 16% of Massachusetts' population (940,000) and occupy about 65% of the land area of the Commonwealth.[viii]



While density is often a significant factor in prioritizing transportation investments, WalkBoston has documented the importance of walking in Massachusetts' history, justifying the provision of safe walking facilities in these rural areas:

> *Since walking was the basic means to get to town activities, churches had to be located within walking distance of homes. The unwritten standard was that a three-mile walk was the maximum that anyone should be required to travel to church. As a result, many towns in Massachusetts are approximately six miles across, with the church at the town center and most of the town contained within a three-mile walking distance from the center in all directions.*

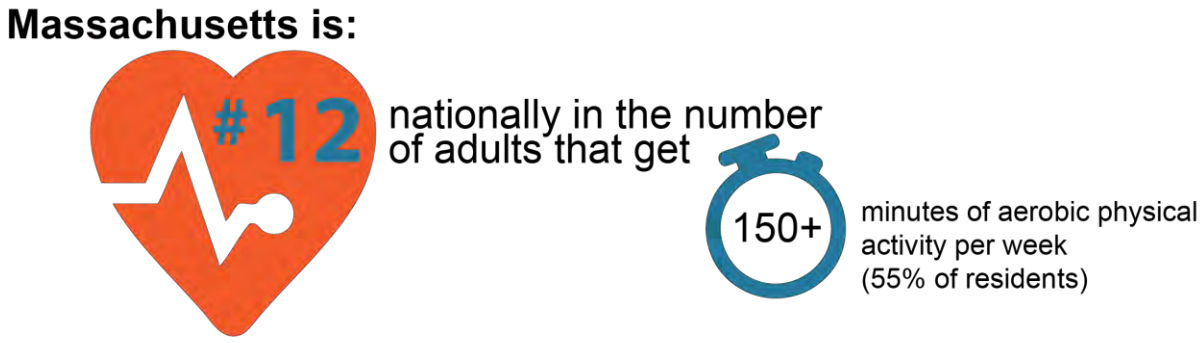
Figure 4: Massachusetts Historic Settlement Pattern was based on Walking (source: WalkBoston)



The 3-mile walk to a town center expressed as 6-mile diameters superimposed on selected Massachusetts towns.

3.2 Public Health

Massachusetts ranks 12th nationally in the number of adults who get 150+ minutes of aerobic physical activity per week (55%). The average for all states is 50.7 percent. Change in Massachusetts from 2005-2013 was +2% (Behavioral Risk Factor Surveillance System (BRFSS) 2005, 2013, ACS 2013 (3-year estimate)).



Massachusetts ties for 11th in percentage of adults who have diabetes (9%). This increased 2% from 2005 to 2013 (BRFSS 2005, 2013).

Massachusetts ties for 2nd worst in percentage of adults who have asthma (11%). This increased 2% from 2005 to 2013 (BRFSS 2005, 2013).

3.3 The WalkUP Wake-Up Call: Boston

This 2015 study conducted a real estate and urban analysis for approximately the eastern half of Massachusetts. Among the key findings are:

- The Boston market is showing substantial and growing pent-up demand for walkable urbanism, demonstrated by significant and increasing real estate premiums on average for walkable urban real estate over drivable suburban.
- The harsh winter of 2014-2015 showed how vulnerable the future of walkable urban places and walkable neighborhoods are, given the years of deferred maintenance and the need for expansion of the MBTA rail and bus system.
- From a public finance perspective, walkable urban places generate 12 times more property tax revenue per acre than edge cities. Walkable neighborhoods generate six times more property tax revenue per acre than drivable subdivisions.
- Considering both housing and transportation costs, walkable urban places and walkable neighborhoods are more affordable than their drivable suburban counterparts.

3.4 Implications

The WalkUP Wake-Up Call report provides economic evidence of the importance of walkability. While the study focused on the eastern part of the Commonwealth, there are findings and trends that apply to more rural areas in western Massachusetts as well. For example, WalkBoston's work on rural walking shows that investments in walking facilities such as trails, paths, and sidewalks are justified in rural areas given Massachusetts' historical settlement pattern. Such investments not only support health and recreation, but also utilitarian trips, which are especially important for low-income individuals with particularly limited transportation options in these areas.

4 Population Projections

An understanding of demographics and population projections is needed to support the plan goal of accessibility. MassDOT's Office of Transportation Planning (OTP) uses a horizon year of 2040 for travel demand modeling forecasts, which is the horizon year for the Pedestrian Plan. OTP provided municipal-level population data for 2010 (U.S. Census), 2020, 2030, and 2040.

Table 3 and Figure 5 show the overall state totals and projections, which forecasts just under 615,000 new residents between 2010 and 2040, an increase of 9.4%.

Table 3: Statewide Population and Projections

Year	Population
2010	6,547,629
2020	6,808,039
2030	7,069,606
2040	7,310,525
2010-2040 increase	**614,813**

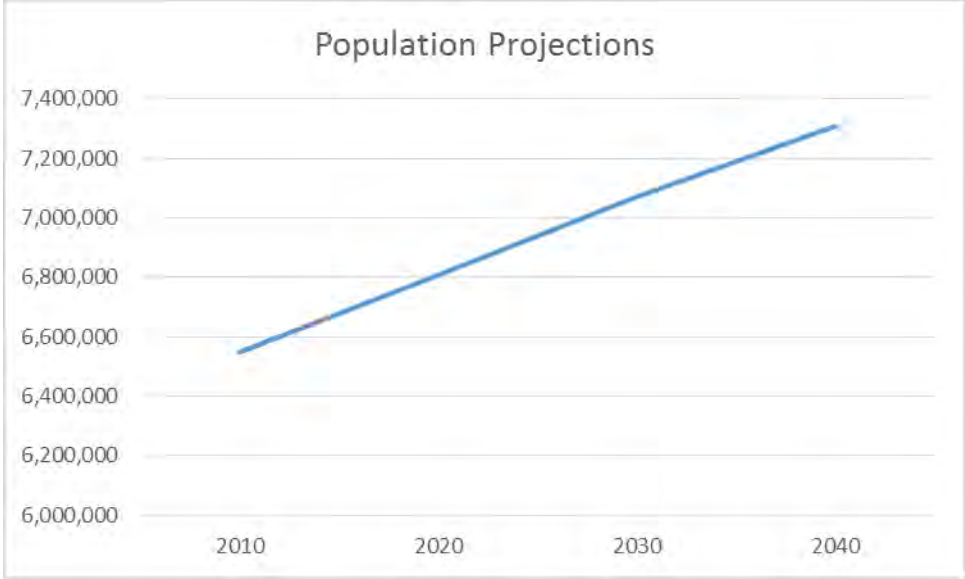


Figure 5: Statewide Population and Projections

4.1 UMass Donahue Institute Demographic Data

The UMass Donahue Institute (UMass) prepared *Long-term Population Projections for Massachusetts Regions and Municipalities* for the Massachusetts Office of the Secretary, published in 2015. This report produces population projections by age and by gender for all 351 cities and towns in Massachusetts. Starting with the US Census baseline 2010 data (with 2014 updated estimates), the report projects population for 2015 and every five years until 2035. They are generally comparable to OTP's 2040 forecast and show a state-level 2035 population of 7,319,469, just over 1% higher than OTP's 2040 forecast. For the purposes of this discussion, the 2035 values related to age and regional population shifts are assumed to represent the 2040 Pedestrian Plan horizon year.

Regional Changes in Population

UMass defines eight "Benchmark" regions (see Figure 6) within the state:

> *The Benchmark regions were designed to approximate functional regional economies (sets of communities with roughly similar characteristics in terms of overall demographic characteristics, industry structure, and commuting patterns). These Benchmarks regions constitute a widely accepted standard among policy officials and analysts statewide that meet common perceptions of distinct regional economies in Massachusetts.*[ix]

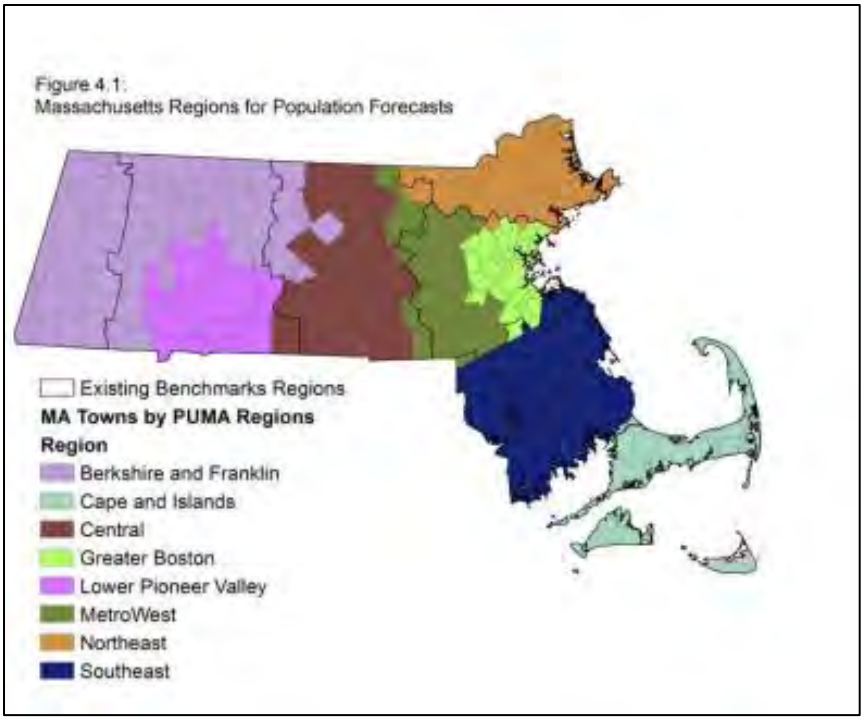


Figure 6: Massachusetts Regions for Population Forecasts (UMass Donahue Institute)

Each municipality was assigned the same Benchmark Region as the UMass report to compare regional shifts in population, as summarized in Table 4. The main takeaways from this regional analysis show virtually no growth in the Berkshire and Franklin region, an 8% decline in the Cape & Islands region, and the most growth in the Greater Boston (18%), Central (10%) and Northeast (10%) regions, as shown in Figure 7.

Table 4: 2010 to 2040 Population Change by Benchmark Region

			Change 2010-2040	
Benchmark Region	**Census 2010**	**OTP 2040**	**Number**	**%**
Berkshire & Franklin	236,058	236,794	736	0%
Cape & Islands	242,595	224,000	-18,595	-8%
Central	693,813	765,779	71,966	10%
Greater Boston	1,975,155	2,322,741	347,586	18%
Lower Pioneer Valley	604,304	649,455	45,151	7%
MetroWest	655,126	713,899	58,773	9%
Northeast	1,031,733	1,131,839	100,106	10%
Southeast	1,108,845	1,186,018	77,173	7%
Total	**6,547,629**	**7,230,525**	**682,896**	**10%**
Benchmark regions from UMass Donahue Institute				

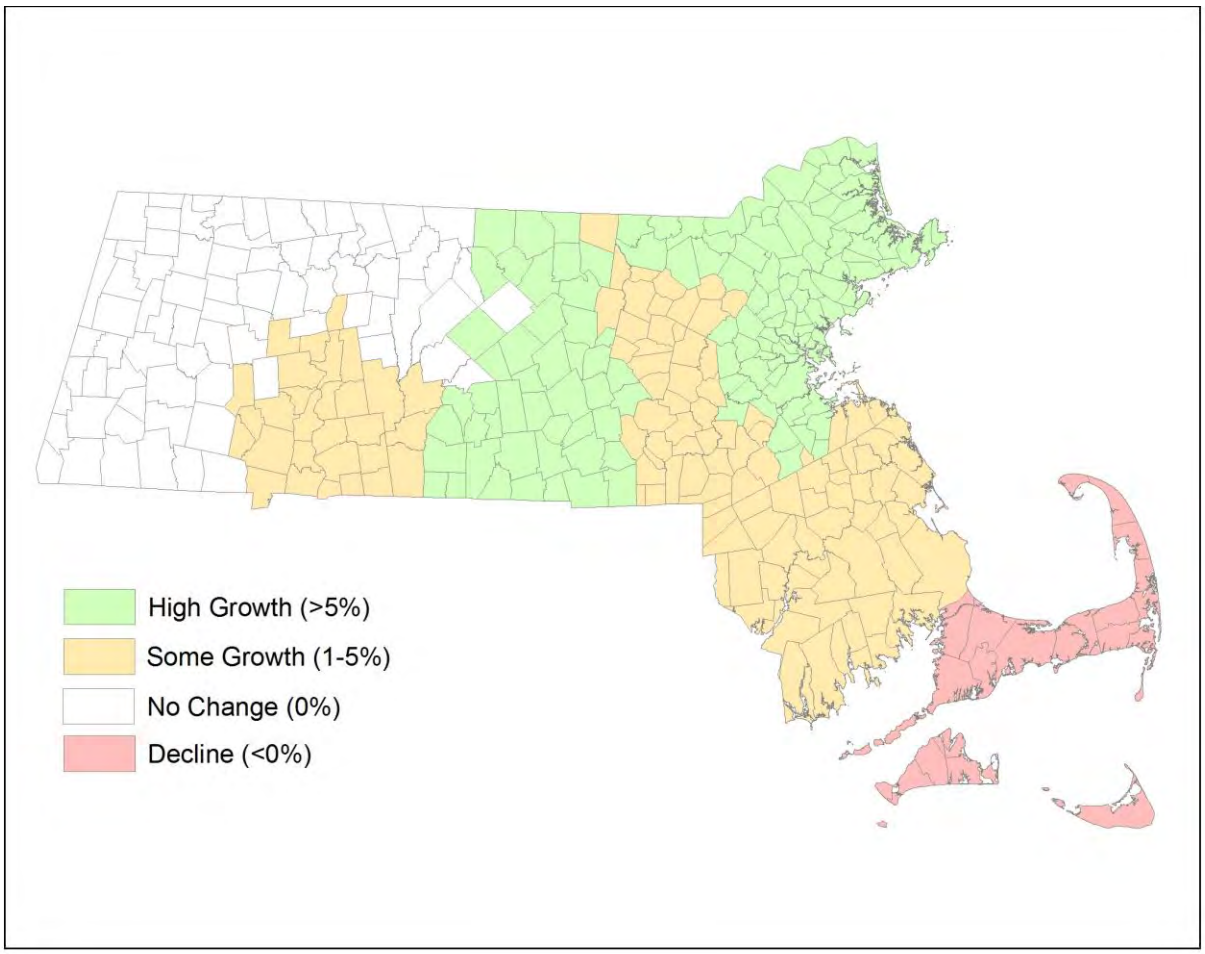


Figure 7: Population Changes by Region (UMass Donahue Institute)

Population by Age and Gender

UMass provides detailed population forecasts by age and gender for each municipality. Table 5 shows the 2010 and 2035 population for six age brackets for females and males. This includes three age brackets for older people compared with the UMass forecasts' single 65+ designation. Because older sub-populations are important when considering mobility, the suggested sub-population age breakdown for the Pedestrian Plan is:

- 65–74 years
- 74–84 years
- 85+ years[x]

Key takeaways from the statewide forecasts follow:

- The number of school-age children is expected to decline by just under 60,000 and the number of people aged 20-39 will remain relatively stable.
- The number of males aged 40-64 will grow by 4% while the number of females in this age bracket will not change substantially.

- The number of people over 65 will grow substantially and accounts for most of the state's forecast population growth. Those 65-74 represent the largest absolute growth in population (197,557 males, 177,479 females, and 375,036 total), an increase of 82%.

Table 5: Population Change (2010–2035) by Age and Gender

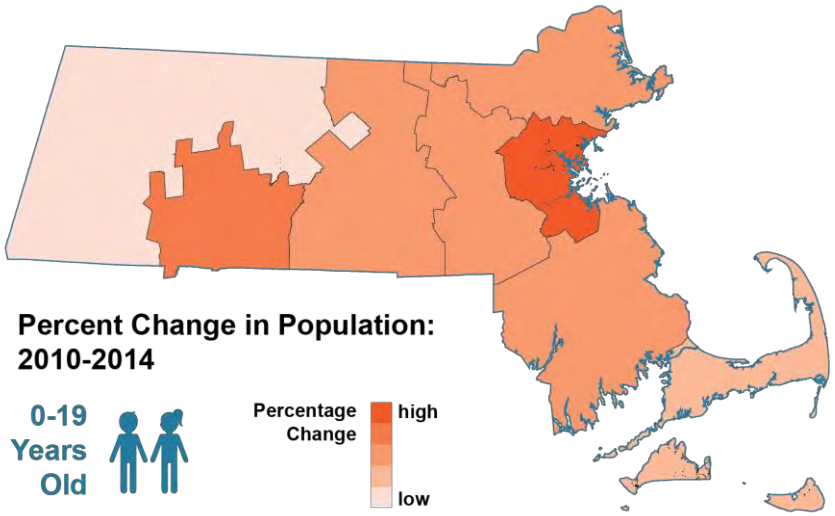
Females				
Age Bracket	**2010**	**2035**	**Change**	
0-19	794,692	765,000	(29,692)	-4%
20-39	882,398	873,752	(8,646)	-1%
40-64	1,177,612	1,185,250	7,638	1%
65-74	247,542	445,099	197,557	80%
75-84	178,583	340,402	161,819	91%
85+	100,174	155,809	55,635	56%
Total	**3,381,001**	**3,765,312**	**384,311**	**11%**
Males				
Age Bracket	**2010**	**2035**	**Change**	
0-19	826,451	799,122	(27,329)	-3%
20-39	856,606	868,415	11,809	1%
40-64	1,107,146	1,148,013	40,867	4%
65-74	208,918	386,397	177,479	85%
75-84	122,482	261,893	139,411	114%
85+	45,025	90,317	45,292	101%
Total	**3,166,628**	**3,554,157**	**387,529**	**12%**
UMass Donahue Institute forecasts with adjustments for elderly sub-populations				

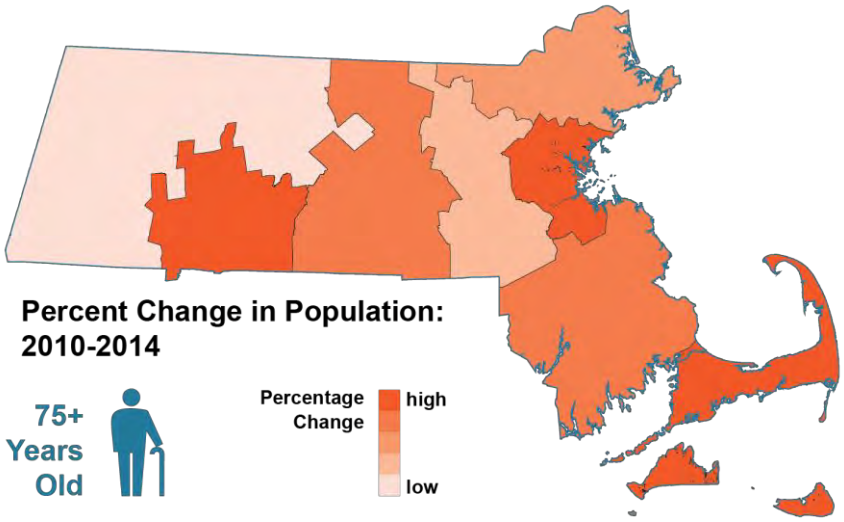
Population by Age by Region

Table 6 effectively combines the age information with the regional information. Unlike Table 5, the information is presented for 2035 instead of 2040. Table 6 shows that the Greater Boston Benchmark Region is the only region forecast to see increases in population ages 0-64. The table also shows the total population change without including Greater Boston. Notably, the population 75 and older in these regions is projected to increase by more than 300,000.

Table 6: 2010 to 2035 Population Change by Age by Benchmark Region

	Age Bracket				
Benchmark Region	**0-19**	**20-64**	**65-74**	**75-84**	**85+**
Berkshire & Franklin	-11,471	-22,776	13,300	17,013	6,472
Cape & Islands	-6,580	-35,466	5,499	8,918	3,165
Central	-14,374	-7,808	44,229	34,147	10,501
Greater Boston	67,269	182,372	99,610	70,128	24,216
Lower Pioneer Valley	-8,713	-14,100	32,969	24,905	5,615
MetroWest	-24,265	-48	48,645	40,800	14,629
Northeast	-30,798	-27,548	69,285	54,120	21,475
Southeast	-28,089	-22,958	61,499	51,199	14,854
Total	**-57,021**	**51,668**	**375,036**	**301,230**	**100,927**
Total w/o Greater Boston	-124,290	-130,704	275,426	231,102	76,711
Benchmark regions from UMass Donahue Institute					





4.2 Implications

Massachusetts is likely to face considerable challenges in meeting the mobility needs of those 75 and older. Consider someone who chooses or has to give up driving—potentially a life altering event. A ride with someone else is often possible (family, friend, public transportation, agency transportation, private transportation, etc.) but may not be timely, available, or affordable. The widespread use of automated vehicles will eventually change senior mobility options and options for aging in place. Until then, whether or not an individual resides in a walkable place with nearby walkable destinations can be a major factor in their quality of life. Outside of Greater Boston, where sidewalk infrastructure is less consistent and travel between home and important destinations can require longer trips, the inability to walk to these destinations can have significant implications in terms of well-being and physical health.

Studies have shown that older people who live in urban environments with accessible and well-maintained pedestrian infrastructure and access to important destinations are generally in better physical condition than their counterparts located in less walkable places. New York City is considered one of the best places to grow old for this reason as older people generally walk more than their cohorts in less urban environments.

Likewise, the decline (except in Greater Boston) in school-age children has implications for school planning and investments, such as school siting and consolidation, which would significantly influence travel behavior not only of students but also of their parents.

5 State Initiatives since the Last Pedestrian Plan

Since the 1998 publication of the Massachusetts State Pedestrian Plan, a number of positive changes have taken place within Massachusetts state government and some additional initiatives are under legislative debate. This section describes the key activities, initiatives, and programs aimed at increasing walking and improving pedestrian safety.

5.1 Creation of MassDOT

The creation of MassDOT on November 1, 2009 began a new era in transportation for the Commonwealth. Prior to MassDOT, the Commonwealth's transportation system was managed by several different agencies, including MassHighway, the Massachusetts Turnpike Authority, MassPort, the Registry of Motor Vehicles, the Massachusetts Bay Transportation Authority (MBTA), and the Department of Conservation and Recreation. With the creation of MassDOT in 2009, many of these agencies and their responsibilities were consolidated into a single entity responsible for planning, investing in, maintaining, and operating all modes of the statewide transportation system.

5.2 Project Development and Design Guide

In 2006, the Massachusetts Highway Department (now the MassDOT Highway Division) published the *Project Development and Design Guide*, one of the earliest design guides to incorporate Complete Streets by helping to transform the way all new projects are designed and by encouraging projects that are sensitive to the local context while meeting the needs of all system users. The Guide ensures implementation of Complete Streets by requiring projects that do not meet its design criteria to file a Design Exception Report. In this way, Complete Streets become the rule rather than the exception.

5.3 Massachusetts Bicycle and Pedestrian Advisory Board

The Massachusetts Legislature established the Massachusetts Bicycle and Pedestrian Advisory Board (MABPAB) in 2004 to guide the state on policy and development of bicycle and pedestrian resources. Board membership includes:

- Representatives from state/regional agencies: MassDOT, MBTA, Department of Conservation and Recreation, Massachusetts State Police, Massachusetts Department of Public Health, Massachusetts Office of Travel and Tourism, Executive Office of Energy and Environmental Affairs, Massachusetts Association of Regional Planning Agencies, and the State Bicycle and Pedestrian Coordinator.
- Fourteen bicycle and pedestrian representatives, including seven non-governmental members appointed by the governor upon recommendation of the co-chairmen of the board: three bicycle safety experts, one bicycle industry representative, three bicycle organization representatives, and seven pedestrian transportation experts.

The MABPAB meets bi-monthly and serves as the Steering Committee in the development of this Plan.

5.4 Moving Together Conference

The MassDOT-hosted annual conference on healthy transportation modes "brings together professionals from state and local government, advocates, and design professionals to advance bicycling, walking, and transit." Participation has continually grown each year and attendance in 2015 was at record levels.

5.5 MassDOT Initiatives

Healthy Transportation Compact

The Healthy Transportation Compact established an inter-agency initiative (MassDOT, Executive Office of Health and Human Services, and Executive Office of Energy and Environmental Affairs) to "facilitate transportation decisions that balance the needs of all transportation users, expand mobility, improve public health, support a cleaner environment and create stronger communities." The Executive Office of Housing and Economic Development is now part of the Compact. See MassDOT's Healthy Transportation page for links to the Transportation Policy Directive (P13-0001 – 9/9/13) and Engineering Directive (E-14-006) (discussed in detail below).

weMove Massachusetts

In May 2014, MassDOT released *weMove Massachusetts (WMM): Planning for Performance, the Commonwealth's 2040 Long-Range Transportation Plan (LRTP)*. The report summarizes MassDOT's new approach to capital planning through the use of multi-modal scenario planning. As an outgrowth of this process, MassDOT has since implemented its custom-built Planning for Performance asset management tool.

Project Selection Process

The Massachusetts Legislature, in Section 11 of Chapter 46 of the Acts of 2013, called for the establishment of a Project Selection Advisory Council (the Council) to develop recommendations for a more data-driven, transparent, and uniform process for selecting projects for MassDOT's capital plan. In mid-2015, the Council submitted its report, Recommendations for MassDOT Project Selection Criteria, to the Legislature. The Council's recommendations established the following eight goals/criteria for which different weights can be applied when scoring projects:

1. Cost Effectiveness
2. Economic Impact
3. Environmental & Health Effects
4. Mobility
5. Policy Support
6. Safety
7. Social Equity
8. System Preservation

These weights are applied differently (or in some cases not at all) according to four project category types:

1. Roads & Paths Modernization
2. MBTA/Regional Transit Modernization
3. Roads & Paths Capacity
4. MBTA/Regional Transit Capacity

Importantly, modernization or expansion of roads and paths both include weights for improvements to mobility and safety of pedestrians.

Pedestrian and Bicycle Accommodation Design Criteria

A MassDOT Engineering Directive, "Design Criteria for MassDOT Highway Division Projects (E-14-006 – 12/9/14)," introduces new controlling criteria for pedestrian and bicycle accommodation. The following are listed under Pedestrian Accommodation:

- Pedestrian accommodation shall be in accordance with Chapter 5 of the *Project Development and Design Guide* and the *AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities*.
- Wherever adjacent land uses include commercial or residential development greater than 5 units per acre, a sidewalk shall be provided along the roadway adjacent to the use.
- For projects in urbanized areas on roadways where pedestrians are legally allowed, sidewalks shall be provided on both sides of the roadway.
- For bridge projects, sidewalks shall be provided on both sides of the roadway if pedestrians are legally allowed.
- For projects on roadways that pass under bridges and where pedestrians are legally allowed, sidewalks shall be provided on both sides of the roadway beneath each bridge.
- The minimum sidewalk width below which a design exception is required is 5 feet, exclusive of curb.

Safe Routes to Schools

The 2005 Federal SAFETEA-LU transportation funding act provided 100% funding for Safe Routes to Schools (SRTS) programs in each state (i.e., no state match was required).

In 2006, MassDOT initiated a two-part SRTS program: 1) an outreach and education program through MassRIDES, and 2) an infrastructure program. The MassRIDES SRTS education and encouragement program is one of the most successful in the country with more than 700 participating schools in more than 180 municipalities.

MassDOT's infrastructure assessment and implementation program has completed nine rounds of solicitations. At least one school in each of more than 75 municipalities was assessed. Beginning with the first project completed in 2010, 26 improvement projects worth more than $14 million are complete or in construction with an additional ten projects in design development. These projects improve walking and bicycling access through new and/or upgraded facilities, improve safety through better traffic management, and organize many school facilities to better separate vehicles from pedestrians and cyclists.

Complete Streets Training and Funding Program

As will be discussed in Section 6.2, MassDOT's Complete Streets policy and program is a direct outgrowth of the 2006 *Project Development and Design Guide*.

Separated Bike Lane Planning and Design Guide

In 2015, MassDOT published the *Separated Bike Lane Planning and Design Guide*. Separated bike lanes can benefit pedestrians by reducing sidewalk riding and, depending on intersection design, shortening crossing distances.

5.6 Other State Programs

Mass in Motion

Mass in Motion is the Massachusetts Department of Public Health's statewide movement that promotes opportunities for healthy eating and active living in the places people live, learn, work and play. Working with communities, schools, childcare centers, and businesses, Mass in Motion hopes to create changes that make it easy for people to eat better and move more. Mass in Motion also helps residents think differently about what they eat and how much they move so they can make better choices to feel healthy and live well. Different entities and agencies have funded the program since its inception in 2009. There are approximately 70 Mass in Motion communities as of spring 2016.

Two organizations with roots in the Mass in Motion program are Walk Bike Worcester and Live Well Springfield, as described in Section 7.1.

State and Local Public Health Actions to Prevent Obesity, Diabetes, and Heart Disease and Stroke (1422)

The Massachusetts Department of Public Health (DPH) won a grant from the Centers for Disease Control and Prevention (CDC) to study environmental and systematic approaches to health and healthful behaviors. As part of this grant, DPH has coordinated with the Metropolitan Area Planning Council (MAPC) to develop a tool to identify roadway segments with the greatest utility for pedestrians and cyclists. The tool has been applied to three communities: Fall River, Springfield, and Northampton, and will soon be available statewide.

Commonwealth of Massachusetts Community Compacts

In 2015, Governor Baker signed an Executive Order creating the Community Compact Cabinet, in order to elevate the Administration's partnerships with cities and towns in all communities of the Commonwealth. The Community Compact is a voluntary, mutual agreement entered into between the Administration and individual cities and towns of the Commonwealth. In a Community Compact, a community will agree to implement at least one best practice that they select from a variety of areas. Those communities participating in the Community Compact will, over a two-year period, implement the best practice(s) they selected when entering into the Compact. Resources for technical assistance from the Commonwealth will be prioritized for those communities entered into a Compact and seeking to implement their best practice(s).

The best practices cover a number of areas including education, energy and environment, financial management, housing and economic development, information technology, regionalization/shared

services, and transportation/citizens safety. The following lists those best practices under transportation/citizens safety:

- **Complete Streets:** Complete Streets policies and programs provide accommodations for all users and modes, create safer and more livable neighborhoods, and encourage healthy transportation alternatives. The municipality will become certified through MassDOT and demonstrate the regular and routine inclusion of complete streets design elements and infrastructure on locally funded roads.
- **Safe Routes to School:** The community will show evidence of a comprehensive Safe Routes to School program which includes the prioritization of snow removal around schools and routes to schools as well as snow removal from bus stops, clearly marked crosswalks, safe sidewalks, safe student pick-up/drop-off areas free from congestion. The program will also include student education on pedestrian safety such as taking care in walking past driveways and through a parking lot, using crosswalks, and crossing with a crossing guard.
- **A Safe and Mobile Future for Older Drivers:** For this best practice, the community will address the anticipated increase in older drivers by identifying strategies to reduce crashes involving older drivers, identify issues surrounding older driver mobility, and identify and promote transportation options for older adults in the community.
- **Sharing Best Practices:** Municipal Public Works Departments and Highway Departments can learn from each other and share best practices about technologies and operating, maintaining and managing the assets and departments for which they are responsible. Participation in the Baystate Roads Program (BSR) is a demonstration of implementing this best practice. The Baystate Roads Program is a federally and state funded program that provides and facilitates the sharing of state of the art planning, design, and operational information for city and town public works managers.
- **Citizen Safety:** There are documented community-based programs to increase pedestrian safety and to promote awareness of the dangers of texting and distracted driving, the dangers of speeding and aggressive driving, and the dangers of driving while impaired. The community will demonstrate participation in the Commonwealth's Office of Public Safety and Security's trainings and conferences as well as the dissemination of public safety information to citizens.
- **Timely Traffic Citation Submissions and Public Safety:** There are documented standards processes that when applied by police departments will improve the timely submission of Civil Motor Vehicle Infraction (CMVI) traffic citations. Timely submissions of traffic citations increases public safety by keeping dangerous drivers off the roads; allows faster distribution of funds to cities and towns; and allows for timely addition of citations to violators' driving records.

Community Preservation Act

Signed into law in 2000, the Community Preservation Act (CPA) is a smart growth tool to incentivize municipalities to preserve and enhance community character and quality of life. It seeks to strengthen local economies by expanding housing opportunities and creating construction jobs as well as promoting tourism through preservation of historic and natural resources.

After adopting CPA by ballot referendum, municipalities create a Community Preservation Fund from a surcharge of up to 3% of the tax levy against real property. This fund is used for protecting open space, historic preservation, outdoor recreation, and affordable housing. Each CPA community also creates a

local Community Preservation Committee (five-to-nine member board) that makes project recommendations to the municipal legislative body.

The CPA statute also creates a statewide Community Preservation Trust Fund (under the Department of Revenue) that provides annual distributions to CPA communities. As of April 2016, 160 Massachusetts municipalities in the state have adopted CPA.[xi, xii]

The following projects are identified as potential recipients of some CPA including:

- Bedford: Pedestrian Master Plan, 2014
- Bedford: Washington Street Footbridge replacement, 2015
- Cohasset: Pedestrian/Bicycle Trail along Greenbush rail corridor, 2003
- Hingham: Harbor Way Master Plan, 2006
- Hingham: Whitney Wharf Pedestrian Bridge, 2012
- Lexington: Pedestrian/Bicycle Route System, 2013
- Randolph: Crawford Square Streetscape Improvements, 2010
- Wilbraham: Village Center Sidewalk Improvement, 2009

Smart Growth Overlay Zones (40R and 40S)

The Smart Growth Zoning Overlay District Act of 2004 (M.G.L. Chapter 40R) seeks to substantially increase housing supply and decrease costs by increasing the amount of land zoned for dense housing. Chapter 40R incentivizes communities to establish new overlay zoning districts to promote housing production and smart growth development. These dense residential and mixed-use zones include high percentages of affordable units (20% or more) and are eligible to be located in:

- Areas near transit stations (rapid transit, commuter rail, bus, and ferry terminals).
- Areas of concentrated development such as town/city centers, existing commercial districts, and existing rural village districts.
- Areas near existing underutilized facilities, infrastructure, or transportation access.

Projects must be developable under the community's smart growth zoning adopted under Chapter 40R, either as-of-right or through a limited plan review process akin to site plan review. Upon state review and approval of a local overlay district, communities become eligible for payments from a Smart Growth Housing Trust Fund, as well as other financial incentives.

Four types of incentives are offered:

- Zoning incentive payments are awarded based on the maximum number of units possible under the 40R overlay zone minus the total number of units permissible under the previous zoning.
- Bonus payments are awarded for each new unit of housing built in the district.
- Educational costs (Chapter 40S) are reimbursed for any net cost of educating new students living in a smart growth district (equal to the cost of educating new students minus the percentage of new revenues from the district otherwise devoted to educational costs and any increase in state educational aid resulting from the new students).
- Funding preference: When awarding discretionary funds, the Department of Housing and Community Development (DHCD) with the Executive Office of Energy and Environmental Affairs, MassDOT, and Executive Office of Administration and Finance must give preference to municipalities with an approved smart growth zoning district.

As of March 2016, DHCD has approved 38 districts.[xiii]

The following are some of the pedestrian-related projects within DHCD-approved districts:

- Dennis: Dennisport Village Center, in which zoning and design guidelines create a pedestrian-friendly environment with a network of walkways, public spaces, and appropriate parking.
- Hyannis: Main Street Business Improvement District with a reconstructed streetscape to be more pedestrian friendly, create a walkway network to the harbor, and provide information kiosks and street décor.
- Southfield: Form Based Code, which requires a pedestrian-oriented "general urban zone" featuring sidewalk buffers with planting beds, public trees, and seating areas. Also restricts parking and loading areas to the rear of a property. Other design requirements include traffic calming, street furniture, and sidewalks. Build-to lines are also illustrated.

5.7 Massachusetts Legislation

Each year, the Massachusetts Legislature considers proposed safety and public health bills that would affect pedestrian safety and mobility. As safety is so heavily impacted by vehicle speed, many of the bills are focused on setting speed limits. While several bills are pending in the current legislature, House 531 and Senate 1807 appear relatively active, meaning they remain in the committee process or the reading process.

Senior Safety Zones (House 531)

According to WalkBoston, this bill allows municipalities to establish senior safety zones (similar to school zones) to help protect a population that relies disproportionately on walking as a means of transportation. The bill is aimed to reduce the risk of vehicle-associated accidents by allowing municipalities to establish Senior Citizen Safety Zones with reduced speed limits of no less than 20 mph; and to place accompanying warning signs in areas frequented by senior citizens.

Vulnerable Road Users, Senate 1807

The bill broadens the definition of "vulnerable road users" to include all non-motorized users and wheelchair users (whether or not the wheelchair is motorized).

New Urban Area Speed Limit Category

MassDOT has worked closely with legislative officials to develop a fourth maximum speed limit category, which would change Section 17 of Chapter 90 for which maximum speed limits are set to include a 25 mph category for roads in urban areas. This designation would generally apply to local roads in Boston's inner core communities and would be in addition to the existing 30 mph speed limit for roads "inside a thickly settled or business district." See Section 2 for a full discussion of speed limits and pedestrian safety.

5.8 Implications

Since the 1998 Massachusetts Pedestrian Plan, the Commonwealth of Massachusetts has taken numerous proactive initiatives to embed walkable environments and livability into local communities. The Community Preservation Act, Smart Growth zones, and now the Community Compacts all integrate

transportation, land use, and community values. The State Legislature is considering changes to speed limits, which would have significant implications for pedestrian safety.

Through a wide variety of programs and guidance, MassDOT has not only developed and promoted Complete Streets design, but also taken steps to ensure that projects are implemented. This Plan will continue that work by coordinating with local practitioners to identify any obstacles or barriers that interfere with the implementation of walkable environments.

Most recently, DPH is proving to be a significant partner in promoting walking and walkable environments. Mass in Motion has made great progress in promoting active transportation in at least 70 communities in Massachusetts. Partnering with DPH and Mass in Motion is an excellent opportunity for outreach and public engagement for this Plan.

MassDOT has nurtured outreach channels through the MABPAB and Moving Together conference. The Plan makes the most of these channels by using MABPAB as its Steering Committee, and by both disseminating and gathering information at Moving Together.

Finally, the pedestrian utility tool that MAPC has developed on behalf of DPH will provide a useful point of departure for the analysis in this Plan. The tool identifies areas of latent pedestrian demand based on land use and transit, and with enhancements to include Environmental Justice, population projections, and other data layers, the results will be used to identify priority areas for additional analysis.

6 Pedestrian Program Investments

Prudent investment and maintenance are core goals of the Plan. MassDOT and the regional agencies responsible for transportation planning use established criteria and processes to guide project selection and funding. This section describes that framework and the programs used to realize Complete Streets and walkable environments, including the statewide Capital Investment Plan, Safe Routes to School, and the new Complete Streets Funding Program.

6.1 MassDOT Draft Capital Investment Plan *[THIS SECTION TO BE UPDATED IF NECESSARY UPON THE APPROVAL OF THE FINAL CIP]*

MassDOT's recently released *Draft 2017–2021 Capital Investment Plan* (CIP) includes three key themes:

1. Maintain and improve overall condition and reliability of the transportation system.
2. Modernize the transportation system to make it safer and more accessible and to accommodate growth.
3. Expand diverse transportation options for communities throughout the Commonwealth.

The CIP proposes a significant commitment to both pedestrian and bicycle investments, stating:

> *Some of the least developed networks in the Commonwealth's transportation system are those for pedestrians and cyclists and for freight. [MassDOT's Draft 2017 – 2021 Capital Investment Plan] provides multi-year funding for a municipal Complete Streets program that will help cities and towns throughout Massachusetts modernize their streets to accommodate all users, including pedestrians and bicyclists, thus building out these important networks as a regular part of roadway maintenance and reconstruction. Similarly, the CIP sets aside $60 million ($15 million annually beginning in FY18) for projects that will address missing links in both pedestrian and bicycle networks after completion of the statewide pedestrian and bicycle plans that are also funded in this CIP.*[xiv]

Table 7 lists eight pedestrian project types representing 56 projects in the CIP (totaling over $200 million) that will improve mobility for pedestrians and people with disabilities. Not included in the table are the dozens of intersection and corridor improvement projects in the CIP, the majority of which likely include pedestrian accommodations and improvements. As shown in Figure 8, shared use paths comprise nearly half of the investments, and the Complete Streets program is one-quarter.

Table 7: Pedestrian-Related Projects in Draft CIP[1]

Pedestrian Project Type	Number	Total Cost	FY17-21
ADA Compliance with Sidewalks	6	$7,863,581	$1,841,763
ADA Compliance Only	2	$6,782,686	$15,934,483
Complete Streets Program	9	$50,000,000	$50,000,000
On-Road Pedestrian and Bicycle Improvements	2	$4,749,335	$4,749,335
Pedestrian-Specific Facilities (bridges, walkways)	4	$15,461,365	$15,461,365
Shared Use Paths	21	$102,780,199	$95,942,805
Safe Routes to School (SRTS)	9	$15,342,376	$8,595,867
Streetscape Improvements	3	$9,245,367	$9,245,367
Total	**56**	**$212,224,909**	**$201,770,985**

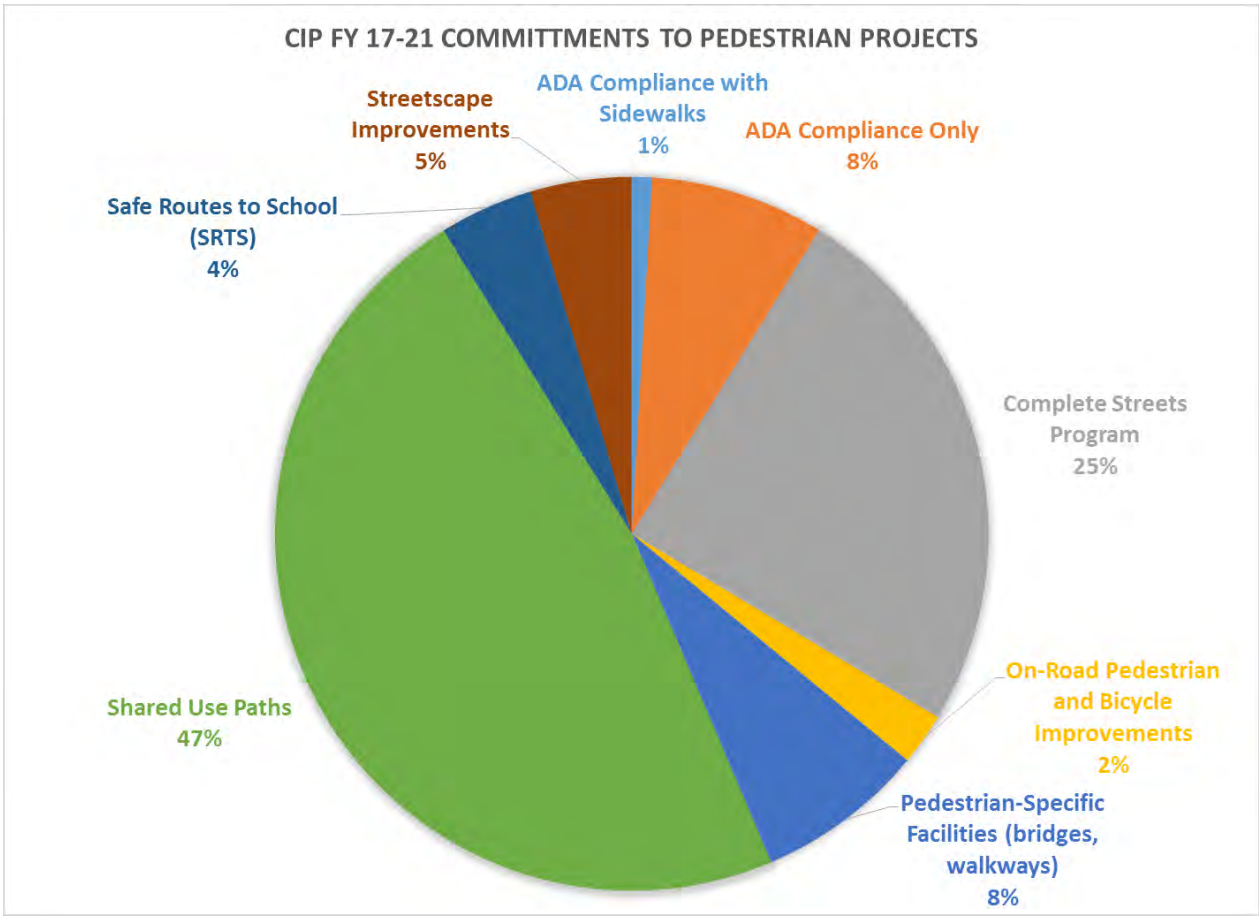


Figure 8: CIP Commitments to Pedestrian Projects

[1] This table excludes bicycle trail projects that may include shared use path elements.

6.2 Complete Streets Funding Program

In support of the Healthy Transportation policy and in response to the establishment of Massachusetts General Law (MGL) Chapter 90I, through Chapter 79 of the Acts of 2014 (Transportation Bond Bill), MassDOT established a funding program to encourage municipalities to regularly and routinely include Complete Streets design elements and infrastructure on locally-funded roads. MassDOT allocated $12.5 million for the first two years of the program, and is accepting its first applications for funding in 2016. The aforementioned draft CIP includes $50 million over five years covering both technical assistance and construction grants. Municipalities work directly with MassDOT as opposed to working through their regional planning agency.

6.3 Metropolitan Planning Organization/Regional Planning Agency (MPO/RPA) Initiatives

Ten of the Commonwealth's 13 RPAs function as Federal MPOs. The Boston region's RPA (Metropolitan Area Planning Council (MAPC)) is a member of the Boston Region MPO (Central Transportation Planning Staff (CTPS)). Municipalities apply to the MPO for project funding. If the project meets evaluation criteria identified by the MPO, it is placed in the funding queue and listed in the MPO's Transportation Improvement Program (TIP).

Each MPO is required to develop a Long Range Transportation Plan (LRTP) that identifies goals, evaluates needs, and sets priorities, which will be supported with federal funding that the MPO receives for planning and programming investments in capital projects. Current LRTPs have a 2040 horizon year. Each MPO's LRTP addresses pedestrian transportation, albeit in different ways, as summarized in Table 8.

Table 8: Pedestrian Elements in Current Regional Transportation Plans

RPA/MPO	Pedestrian Element of Regional Long Range Transportation Plan	Date	Separate Pedestrian Plan?	Comments
Berkshire Regional Planning Commission (BRPC)	Section III – Complete Streets	August 2015	No	
Boston Region Metropolitan Planning Organization	Integrated throughout document	July 2015	July 2010 (by MAPC)	Unique investment category: Bicycle Network and Pedestrian Connection Program
Cape Cod Commission (CCC)	Appendix F	July 2015	Sep. 2015: Bike / Pedestrian "Safety Plan"	
Central Mass Regional Planning Commission (CMRPC)	Chapter 4: Transportation Modes – Pedestrians	July 2015	2011: Regional Bicycle & pedestrian Plan	
Franklin Regional Council of Governments (FRCOG)	Ch. 10. Bicycle & Pedestrian	July 2015	Complete Streets September 2014	
Montachusett Regional Planning Commission (MRPC)	Ch. 10. Bicycle & Pedestrian	July 2015	No	
Martha's Vineyard Commission (MVC)	Ch. 10. Bicycle & Pedestrian	July 2015	No	
Merrimack Valley Planning Commission (MVPC)	Multiple chapters	July 2015	January 2015 Active Transportation Plan	Covered in Safety, Mobility, and Environmental Sustainability
Northern Middlesex Council of Governments (NMCOG)	Ch. 7: Active Transportation Network	July 2015	No	
Nantucket Planning & Economic Development Commission (NP&EDC)	Ch. 6: Bicycle and Pedestrian Network	July 2015	Dec 2005 Bicycle & Pedestrian Master Plan	
Old Colony Planning Commission (OCPC)	Ch. 7: Bicycle and Pedestrian Transportation	August 2011	January 2013: Bike & pedestrian Connectivity & Livability Study	Updated RTP ("MovingU2040") in development
Pioneer Valley Planning Commission (PVPC)	E: Non-Motorized Transportation – Pedestrian Circulation	July 2015	September 2000: Regional Bike & Pedestrian Transportation Plan	
Southeastern Regional Planning and Economic Development District (SRPEDD)	Pedestrian Transportation	March 2016	No:(bicycle plan in process)	

6.4 Implications

The Pedestrian Plan must be structured to feed into the CIP, and likewise, the three main themes of the CIP support this Plan's goal of accessibility, safety, maintenance, and prudent investment. MassDOT has already taken proactive steps to streamline project funding and affect real change through the Complete Streets funding program, and the CIP has dedicated over $200 million to projects that will directly impact pedestrians. The Plan will consider ways to build on these initiatives and coordinate with regional MPOs.

7 Advocacy and the Promotion of Health and Walking

Advocacy groups have long advanced visions similar to the one articulated for this Plan. These groups represent potential partners in advancing active transportation, safety, walkable environments, and health. This section provides an overview of organizations promoting walking and pedestrian safety and offers highlights of national initiatives.

7.1 Advocacy Organizations

WalkBoston

WalkBoston, founded in 1990, "is a non-profit pedestrian advocacy organization dedicated to improving walking conditions in cities and towns across Massachusetts . . . [WalkBoston's] goal is to make walking and pedestrian needs a basic part of the transportation discussion. [They]:

- Make people aware that walking is a major mode of transportation;
- Meet with public officials to initiate changes;
- Advise professionals about pedestrian environments;
- Propose and support legislation;
- Produce educational materials;
- Lead interesting walks year-round; and
- Educate others to use their voice for advocacy."

Livable Streets Alliance

Livable Streets Alliance is a Boston-area organization whose mission is to "enable people to think differently and demand a transportation system that balances transit, walking, and biking with automobiles [and to] promote safe, convenient, and affordable transportation in urban Boston making our community more connected and more livable for everyone."

Massachusetts Vision Zero Coalition

Massachusetts Vision Zero Coalition "advocates for the implementation of Vision Zero in Boston and for the adoption of Vision Zero throughout Massachusetts. The new and growing coalition includes community-based organizations, nonprofits, businesses, civic groups and individuals representing communities across the state."

WalkBike Worcester

WalkBike Worcester (WBW) works to make walking and bicycling in Worcester more safe, pleasant and convenient. As described on its website:

> *WBW was founded in 2011 as a work group of the Worcester Food and Active Living Policy Council to carry forward the active transportation priorities identified through the City of Worcester's Mass in Motion grant. We work to bring the "complete streets" approach into multiple city plans, policies and practices and increase public support for it . . . WBW represents a broad range of organizational partners and a growing list of Worcester residents eager to see our community safer and more friendly to walkers and cyclists.*

Live Well Springfield

Live Well Springfield is a community-based coalition that includes over 20 organizations working in Springfield. The coalition supports a grassroots movement towards health equity through improving access to healthy eating and active living opportunities. In 2012 Pioneer Valley Planning Commission received a Community Transformation Grant (CTG) from the Center for Disease Control to further this movement. Work includes the development of a comprehensive plan for a more walkable/bikeable Springfield.

7.2 Local Bicycle & Pedestrian Committees

Many towns and cities in Massachusetts have organized Bicycle & Pedestrian Committees to improve alternatives locally and provide a voice for these modes in municipal government. They support initiatives for specific facility projects, advise elected officials and administrators, and advance changes to local bylaws and policies. These Committees will likely prove to be the "boots on the ground" for advancing and implementing the statewide Plan.

7.3 National Health Promotion Campaigns

U.S. DOT's Safer People, Safer Streets Initiative

In January 2015, U.S. Transportation Secretary Anthony Foxx launched the Department's "Safer People, Safer Streets Initiative" to increase focus on non-motorized safety issues and help communities create safer, better-connected bicycling and walking networks. This included launching a year-long Mayors' Challenge for Safer People and Safer Streets, encouraging mayors and other elected city officials to participate by leading a call to action and forming a local action team to advance safety and accessibility goals by taking on one or more Challenge activities outlined below. U.S. DOT has invited Challenge Cities to participate in forums, webinars, and learn about available resources to help them accomplish their Challenge activity goals. The Challenge is based on the US DOT Policy Statement on Bicycle and Pedestrian Accomnodation Regulations and Recommendations The Challenge encourages cities to:

- Take a Complete Streets approach.
- Identify and address barriers to make streets safe and convenient for all road users, including people of all ages and abilities and those using assistive mobility devices.
- Gather and track biking and walking data.
- Use designs that are appropriate to the context of the street and its uses.
- Take advantage of opportunities to create and complete ped-bike networks through maintenance.
- Improve walking and biking safety laws and regulations.
- Educate and enforce proper road use behavior by all.

Step It Up! The Surgeon General's Call to Action to Promote Walking and Walkable Communities

The U.S. Surgeon General's Call to Action to Promote Walking and Walkable Communities (known as Step it Up!) is intended to increase walking across the United States by calling for improved access to safe and convenient places to walk and wheelchair roll, as well as for a culture that supports these activities for people of all ages and abilities. According to the website, the Call to Action presents five goals and supporting implementation strategies that are grounded in scientific and practice-based evidence. These goals call for action by multiple sectors of society, including transportation, land use, and community design; parks, recreation, and fitness; education (schools, colleges, and universities); business and industry; volunteer and nonprofit; health care; media; and public health. Families and individuals will also need to be involved to achieve these goals.[xv]

This Call to Action complements existing recommendations to help Americans become more physically active, such as those found in the Surgeon General's National Prevention Strategy, the White House Task Force on Childhood Obesity Report to the President, as well as the national health objectives for physical activity in the U.S. Department of Health and Human Services Office of Disease Prevention and Health Promotion's Healthy People 2020. It also aligns with the goals of initiatives such as First Lady Michelle Obama's Let's Move!, the National Institute on Aging at the National Institutes of Health (NIH) Go4Life Campaign, the U.S. Department of Transportation's Safer People, Safer Streets Initiative (see above), the White House's America's Great Outdoors Initiative, and the Partnership for Sustainable Communities.

In addition, this Call to Action builds on the National Physical Activity Plan Alliance's National Physical Activity Plan, which was developed by public and private partners to provide a comprehensive set of policies, programs, and initiatives that can help all people become more physically active and meet the 2008 Physical Activity Guidelines for Americans. It also reflects comments received in response to a request for information (78 FR 19491) published in the Federal Register on April 1, 2013. More than 750 comments were received from the public, state and local governments, nonprofit organizations, and professional organizations. All comments were carefully considered in the preparation of this Call to Action.

7.4 Implications

Efforts to advance walking and walkable environments extend from the US Surgeon General and the First Lady of the US to local Bicycle & Pedestrian Committees. This wide spectrum is necessary to influence federal policy and actually implement the details that affect a community's walkability.

Advocacy groups and local Bicycle & Pedestrian Committees are important partners in both the development and implementation of this Plan. They have knowledge specific to walking in Massachusetts and outreach channels which will help to both disseminate and gather information.

8 Conclusions

This memorandum establishes the contextual implications for the development of the Massachusetts Pedestrian Transportation Plan. The conclusions that can be drawn from this overview are organized below around the core goals developed by MassDOT in conjunction with stakeholders.

Accessibility

The demographics of Massachusetts are shifting in a way that there will likely be more walkers in the future, particularly older walkers who are typically more vulnerable.

This demographic shift further speaks to a need to pay attention to walking for utilitarian trips and the importance of a safe, walkable environment that connects to useful destinations, not only in urban areas, but also in rural ones, where access to transit and other transportation options may be particularly limited.

Safety

Reducing vehicle speeds in areas with pedestrians is critical to improving safety. Likewise, shifting the focus from total number of crashes to the severity of crashes and their impact on vulnerable users like pedestrians is a key piece in realizing more walkable environments. The Plan will highlight nearly 20 years of research in crash reduction and crash modification factors that can be used to support countermeasures tailored to unique situations.

The term safety can include disease prevention as well as injury prevention. From the US Surgeon General to local Mass in Motion coordinators, there is great potential in partnering with health agencies to educate the population on the importance of walking for health and provide more opportunities for active transportation in Massachusetts.

Maintenance

Maintenance is at the core of accessibility and safety. Particularly as the state population ages, the need for modern infrastructure that is ADA compliant and in good condition (i.e., minimal tripping hazards) will be critical.

Moreover, in order to realize the greatest usability of the walking network for utilitarian trips, the network must be accessible 24 hours a day and 365 days a year. Therefore, it must be well lit and clear of snow and ice.

Prudent Investment

The Commonwealth has established proactive funding programs and planning and design processes for enhancing the built environment and improving safety for vulnerable road users. Ensuring that programs like Complete Streets Funding and the Community Compacts are successful will be an important piece of realizing the pedestrian plan.

It will be critical moving forward that this Plan be developed in a manner consistent with the CIP In order to have the greatest effect. Therefore, the Plan should maintain a focus on the three themes described in the CIP, with respect to walkability:

1 Maintain and improve overall condition and reliability of the transportation system.

2 Modernize the transportation system to make it safer and more accessible and to accommodate growth.

3 Expand diverse transportation options for communities throughout the Commonwealth.

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[i] http://ecowest.org/land/state-vmt/

[ii] https://www.transportation.gov/fastlane/2015-likely-have-broken-record-vehicles-mile-traveled

[iii] Forbes, "Urban Headwinds, Suburban Tailwinds," 1/22/2015. http://www.forbes.com/sites/trulia/2015/01/22/urban-headwinds-suburban-tailwinds/#794948ce29e7

[iv] FHWA "Achieving Multimodal Networks: Applying Design Flexibility and Reducing Conflicts," May 2016.

[v] FHWA, ITE *Methods and Practices for Setting Speed Limits: An Informational Report*, page 10.

[vi] "Sweden's Vision Zero" (PDF). World Health Organization.

[vii] http://www.its.dot.gov/factsheets/cv_v2pcomms.htm

[viii] WalkBoston: Rural Walking in Massachusetts.

[ix] 2015 UMass Donahue Institute, *Long-term Population Projections for Massachusetts Regions and Municipalities,* page 62.

[x] The Demographics of Aging, http://transgenerational.org/aging/demographics.htm

[xi] http://www.communitypreservation.org

[xii] http://www.mass.gov/dor/local-officials/municipal-databank-and-local-aid-unit/data-bank-reports/cpa

[xiii] EEA Smart Growth Toolkit http://www.mass.gov/envir/smart_growth_toolkit/pages/mod-40R.html and EOHED Program Description (http://www.mass.gov/hed/community/planning/chapter-40-r.html.

[xiv] CIP page 17.

[xv] http://www.surgeongeneral.gov/library/calls/walking-and-walkable-communities/call-to-action-walking-and-walkable-communites.pdf