

2010

The Boston Region's Pedestrian Transportation Plan



MAPC Project Team

David Loutzenheiser
Alison Felix, AICP

Contributors

Mariana Arcaya
Anna Biton
Eric Bourassa
Susan Brunton
Sam Cleaves, AICP
Jim Gallagher
Rob Goodspeed
Jessie Grogan
Mark Racicot, AICP
Jennifer Raitt, AICP

Advisory Committee

Rosalie Anders, City of Cambridge
Clark Brewer, Town of Cohasset
Cathy Buckley, Boston Region MPO
Cindy Campbell, Commonwealth of Massachusetts, Highway Safety Division
John DePriest, AICP, City of Chelsea
Mark Fenton, Town of Scituate
Victoria Fletcher, Town of Stow
Chris Hart, Institute for Human Centered Design
David Koses, AICP, City of Newton
Karen O'Connell, Town of Dedham
Lea Susan Ojamaa, Massachusetts Dept. of Public Health
Steve Olanoff, Town of Westwood
Bob Sloane, Walk Boston
Julie Vaughn, Town of Concord

This document was prepared for the Boston Region MPO. Its preparation was supported by 3C Transportation Planning Funds and by state and local matching funds. Massachusetts Department of Transportation Contracts 0056010 and 0059795 and EOTC Section 5303: MA-80-0003 and MA-80-0004.

This report was funded in part through grants from the Federal Highway Administration of the U.S. Department of Transportation. The contents of this report do not necessarily reflect the official views or policies of the U.S. DOT.

This study was conducted under the direction of the **Boston Region Metropolitan Planning Organization**. The MPO is composed of state and regional agencies and authorities, and local governments. The **Metropolitan Area Planning Council** (MAPC) was the principal author of this report. MAPC is Greater Boston's regional planning agency whose mission is to promote smart growth and regional collaboration in Metropolitan Boston.

June 2010

Table of Contents

Executive Summary.....	i
1. Introduction	1-1
2. Regional and Local Visions.....	2-3
a. Regional Vision.....	2-3
b. Local Visions.....	2-5
3. Walking in the Boston Region	3-7
a. Boston Region Commuting Patterns.....	3-7
b. Pedestrian Surveys.....	3-8
c. Sidewalk Inventory.....	3-11
d. Public Health	3-11
e. Pedestrian Crash Data.....	3-11
4. Current Regional Practices.....	4-14
a. MetroFuture.....	4-14
b. MPO Policies	4-15
c. TIP/MPO Process.....	4-15
d. Massachusetts DOT Development & Design Guidebook.....	4-16
e. Roadway and Bridge Design.....	4-17
f. Massachusetts Environmental Policy Act (MEPA)	4-17
g. National Environmental Policy Act (NEPA)	4-17
5. Community Initiatives	5-18
a. Master Planning	5-18
b. Sidewalk Construction and Retrofitting.....	5-19
c. Prioritizing Sidewalk Construction Locations.....	5-23
d. Paths.....	5-24
e. Rail Trails	5-25
f. Education and Programs	5-25
g. Advocacy Groups.....	5-28
h. Snow and Ice Clearance	5-31
6. Laws, Codes and Legislation	6-35
a. Federal	6-35
b. National.....	6-35
c. State	6-36
d. Local Zoning Codes and Land Use Regulations	6-37
e. Pending	6-38

7. Pedestrian Infrastructure Design	7-39
a. Design Guidelines.....	7-39
b. Accessibility	7-41
c. Design Essentials	7-42
<i>i. Walkways.....</i>	<i>7-44</i>
Sidewalks.....	7-44
Paths.....	7-46
Shared Streets.....	7-47
Shared-Use Path.....	7-47
<i>ii. Roadways.....</i>	<i>7-48</i>
Driveways.....	7-48
Lane Rechannelization	7-48
Separation.....	7-49
Cul de Sacs.....	7-50
Lighting.....	7-51
<i>iii. Intersections.....</i>	<i>7-51</i>
Crosswalks.....	7-51
Mid-Block Crosswalks.....	7-53
Curb Extensions.....	7-54
Curb Radii.....	7-55
Curb Ramps	7-56
Signals at Intersections	7-57
d. Buildings and Land Use	7-60
8. Funding	8-65
a. Federal Highway Administration.....	8-65
b. Federal Transit Administration	8-68
c. State	8-69
d. Construction Safety and Maintenance	8-70
e. Other Programs.....	8-71
9. Action Items	9-72

Cover Photo Locations – Top – Cambridge, Bottom – Downtown Boston.

The Boston Region's Pedestrian Transportation Plan

Tables and Figures

Table 1 Pedestrian Planning Survey Summary.....	3-9
Figure 1 Municipalities with the Highest and Lowest Walk to Work Rates.....	3-7
Figure 2 Student Access to School	3-8
Figure 3 Impact Speeds, Pedestrian Fatality and Injury.....	3-12
Figure 4 Pedestrian Wayfinding Sign on Brandeis University Campus	5-18
Figure 5 Shared Street in Cambridge	5-19
Figure 6 Path in Lincoln	5-24
Figure 7 Trail in Wellesley	5-24
Figure 8 Map of the Bay Circuit Trail.....	5-24
Figure 9 Sidewalk Snowplow.....	5-32
Figure 10 City of Cambridge's On-Line Snow Removal Reporting System.....	5-33
Figure 11 Examples of what is Wrong.....	7-42
Figure 12 Examples of what is Right	7-43
Figure 13 Brick Sidewalk in Newton.....	7-44
Figure 14 Sidewalk Zones.....	7-45
Figure 15 Sidewalk in Norfolk, Massachusetts.....	7-46
Figure 16 Paths in Lincoln (walking, left) and Natick (shared use, right).....	7-46
Figure 17 Shared Street in Harvard Square, Cambridge	7-47
Figure 18 A Shared-Use Path	7-47
Figure 19 Driveway Crossing at Sidewalk Level	7-48
Figure 20 Lane Rechannelization	7-48
Figure 21 Street that has Undergone Lane Rechannelization	7-49
Figure 22 Example of a Planter Strip.....	7-49
Figure 23 Example of a Bicycle Lane	7-50
Figure 24 Cul de Sac Connectors.....	7-50
Figure 25 Examples of Crosswalk Markings	7-52
Figure 26 Continental Crosswalk Marking - Recommended.....	7-52
Figure 27 Curb Extensions.....	7-54
Figure 28 Curb Extension – Image and Graphic.....	7-55
Figure 29 Diagram of Curb Radii	7-55
Figure 30 Small Curb Radii (left) and Large Curb Radii (right)	7-56
Figure 31 Sides of Curb Ramps (left) and Landings at the Top of Curb Ramps (right).....	7-56
Figure 32 Curb Ramp.....	7-57
Figure 33 Concurrent and Exclusive Signals.....	7-58
Figure 34 Countdown Timer	7-58
Figure 35 Building Facade Treatment in Needham.....	7-60
Figure 36 Street-Oriented Building in Canton.....	7-60
Figure 37 Davis Square, Somerville	7-63
Figure 38 Essex Street Pedestrian Mall, Salem	7-63
Figure 39 Mashpee Commons, Mashpee	7-63

Appendices

Appendix A Boston Region Commuting Patterns & Vehicle Ownership 2000 Census Data	A-1
Appendix B Sidewalk Coverage by Municipality (2007).....	B-2
Appendix C Pedestrian Fatalities within the Boston Region (2002-2006)	C-12
Appendix D Pedestrian-Related Issues to Consider when Reviewing Development Plans.....	D-13
Appendix E Resources	E-14
