



Vision

Boston's Complete Streets initiative aims to improve the quality of life in Boston by creating streets that are both great places to live and sustainable transportation networks. The Complete Streets approach places pedestrians, bicyclists, and transit users on equal footing with motor vehicle users, and embraces innovative designs and technologies to address climate change and promote active healthy communities.

Boston's streets have evolved over centuries of growth and development. Winding streets in the North End and Dorchester contrast with the 19th century gridiron pattern of streets in the Back Bay and South Boston. Historic parkways and tree-lined boulevards link downtown with neighborhoods and main street districts. The result is a patchwork of iconic streets and squares, and an eminently walkable city. Framed by a mix of historic and modern architecture, and brought to life each day by a diverse population, each street in

Boston has a distinctive flavor. This legacy of vibrant, walkable public spaces provides an ideal platform to explore new innovations in street design.

Boston's Complete Streets guidelines establish new standards for street design and reconstruction projects. Respecting the past and responding to contemporary values and needs, they are driven by the following imperatives:



Multimodal

Streets are designed for pedestrians of all ages and abilities, bicyclists, transit users and motor vehicle drivers. Multimodal designs ensure Boston's streets are safe and shared comfortably by all users.



Green

Streets are energy efficient, easy to maintain, and include healthy trees, plants, and permeable surfaces to manage storm water. Design features encourage healthy, environmentally friendly, and sustainable use of Boston's street network.



Smart

Streets are equipped with the physical and digital information infrastructure required to move all modes of transportation more efficiently, support alternatives such as car and bicycle share, and provide real-time data to facilitate trip planning, parking, and transfers between modes of transportation.

Boston's Complete Streets

Bus Lanes and Transit Prioritization

at intersections improve the reliability of routes with high passenger volumes. Shelters with amenities and next bus information improve convenience for passengers.



Intelligent Signals and Traffic Cameras

manage traffic flow in real-time. They facilitate vehicle progression and reduce wait times, improving fuel efficiency and reducing GHG emissions.



Electric Vehicle Charging Stations



support the adoption of a new generation of clean-fuel vehicles. Linked to smart electric grids that use alternative energy sources such as solar and wind, they will help reduce dependence on fossil fuels and combat climate change.

Ease of Maintenance



informs the design of roadways and sidewalks, favoring durable materials and maintenance agreements for special features to enhance the life and upkeep of Boston's streets.

Accessible Surfaces



with smooth, slip-resistant materials for sidewalks and crosswalks create comfortable walking environments that make streets welcoming for people of all ages and abilities.

Permeable Surfaces



for roadways and sidewalks help reduce flooding and erosion and preserve capacity in storm drains and combined sewers.

Bicycle and Car Share Stations provide the convenience of personal transportation, low costs, and energy savings without the need for car ownership.



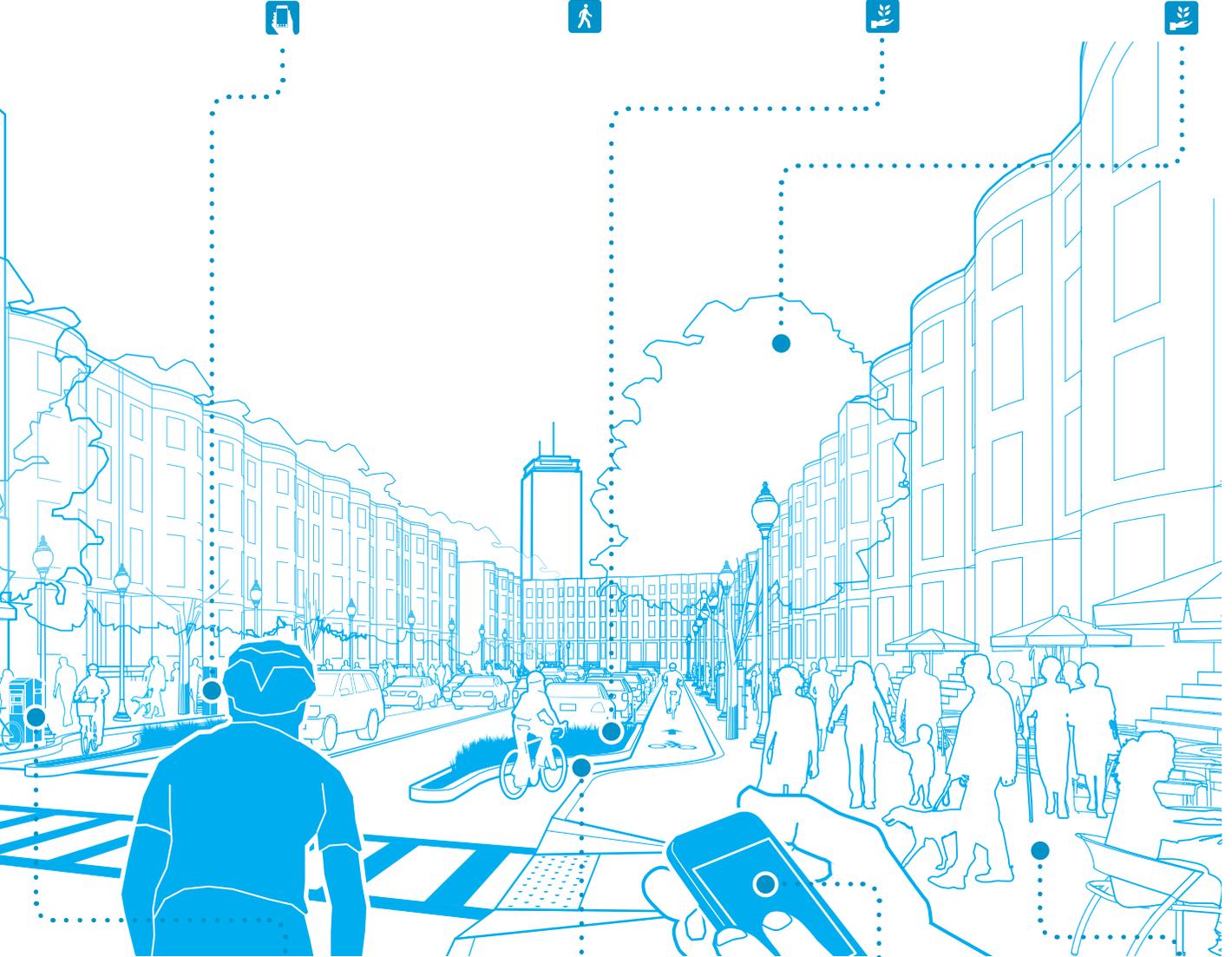
Minimum Lane Widths assist in the accommodation of pedestrians and bicyclists when the available public right-of-way is limited in width. Narrower roadways also result in safer vehicle speeds.



Rain Gardens and other greenscape elements at key locations divert stormwater directly to the soil. Maintainable rain gardens can filter pollutants, improve air quality, and provide greenery on the street.



Street Trees with sufficient rooting volume to thrive provide shade and beauty; support wildlife habitat and reduce air pollution; and energy consumption.



Smart Meters that accept prepaid cards, payment by mobile phones, and allow for variable pricing facilitate more efficient use of limited curbside space.



Bicycle Lanes and Cycle Tracks create a citywide network that increases safety and encourages more people to bicycle.



Digital Tags and Information Panels integrated with street furniture and building facades enable wayfinding, community bulletin boards, trip planning, and place-based social networking.



Wide Sidewalks with unobstructed accessible pathways encourage walking. When combined with proper lighting, street trees, and vibrant street walls they are inviting, safer, and contribute to placemaking.





Why Streets Matter

1. Streets define the character of Boston's neighborhoods. Great streets for walking, bicycling, and activities are great places for everyone.
2. Streets and sidewalks make up 56% of city-owned land. How we use this land reflects how we want to live.
3. Streets and public spaces are responsible for making Boston a premier walking city. Approximately 30% of all trips within the city and 75% of all trips within a neighborhood are made on foot.
4. Streets can help reduce climate change by encouraging sustainable modes of travel. As transportation currently contributes 27% of greenhouse gas emissions, Boston has a goal of reducing vehicle miles travelled by 7.5% by 2020.
5. Streets with bicycle lanes and cycle tracks create a welcoming, friendlier and safer city. Boston has installed 60 miles of bicycle facilities since 2009 with a goal of installing 20 miles per year for the future.
6. Streets that move traffic efficiently without speeding are safer for all. Boston has installed over 200 traffic management cameras, and supports 25 mph speed limits and 15 mph safety zones.
7. Streets can encourage the use of transit by providing bus lanes and welcoming station environments. In 2012, public transportation ridership in the Boston area was the highest since 1946.
8. Streets can help people make healthy decisions by supporting walking, bicycling, and transit. The Boston Moves for Health campaign has set an annual goal of logging 10 million miles city-wide. A recent survey counts 23% of all Bostonians as obese.
9. Streets lined with healthy trees provide beauty, shade, and improved air quality. Boston is working to increase its green canopy 20% by 2020.
10. Streets are Boston's primary stormwater conduit. With more than 50% of city being impervious, Boston has a goal of recharging 1" of rainfall in groundwater conservation districts and providing 25% of the Greenscape/Furnishing Zone with vegetated areas.

Using the Manual

Purpose

The City of Boston has developed the Boston Complete Street Design Guidelines (the Guidelines) to provide policy and design guidance to governmental agencies, consultants, private developers, and community groups on the planning, design, and operation of roadways and sidewalks in Boston. The Guidelines are intended to ensure that Boston's streets are safe for all users, and to foster an efficient project development and review process.

Street design in the City of Boston is a complex endeavor and designs must respond to varied local conditions and site constraints. Design decisions require flexibility to balance the use of available guidance and engineering judgment with innovations in street design and technological advances. These Guidelines have been developed to supplement existing manuals and standards including the Manual on Uniform Traffic Control Devices (MUTCD), and guidance issued by the National Association of City Transportation Officials (NACTO) and the American Association of State Transportation Officials (AASHTO).

The development of the Guidelines is rooted in the experience of innovation and experimentation in street design in Boston and around the world. As such, the guidelines are intended to evolve and adapt to incorporate new treatments and techniques as they are developed and put to use.

Street Types

The new Street Types form the basis of Boston's Complete Street Guidelines. They have been developed to supplement the functional street classifications and to provide additional guidance during the selection of design elements. They can serve as models or as options when communities need to make informed choices in the visioning process of a corridor redesign project. Taking into consideration the type of street will help ensure that land use contexts are reflected in the design and use of Boston's streets.

Chapter Layout

The layout and design of each chapter is organized in a hierarchy to guide readers from high level design principles to individual design treatments. The principles are framed using the three themes of Boston's Complete Streets—Multimodal, Green, and Smart. Public agencies responsible for review and/or approval of design elements are highlighted in grey at the beginning of each Chapter or main section, and in boldface text for individual treatments as appropriate.

Individual Treatments

The discussion of individual treatments in each chapter is organized within the following three sections:

- ▶ **Overview:** Provides a definition and general description of the individual treatment.
- ▶ **Use:** Describes under what conditions the treatment is appropriate and provides specific design guidance.
- ▶ **Considerations:** Provides guidance to help tailor the use of individual treatment for varying contexts.

Acronyms

APS	Accessible Pedestrian Signal	ISD	Inspectional Services Department
AASHTO	American Association of State Highway Transportation Officials	LPI	Leading Pedestrian Interval
ADA	Americans with Disabilities Act	LOS	Level of Service
ADT	Average Daily Traffic	LED	Light-Emitting Diode
BCDC	Boston Civic Design Commission	LRTP	Long Range Transportation Plan
BLC	Boston Landmarks Commission	MUTCD	Manual on Uniform Traffic Control Devices
BRA	Boston Redevelopment Authority	MBTA	Massachusetts Bay Transit Authority
BTD	Boston Transportation Department	MassDOT	Massachusetts Department of Transportation
BWSC	Boston Water and Sewer Commission	MIVIS	Massachusetts Interagency Video Information System
BRT	Bus Rapid Transit	MONUM	Mayor's Office of New Urban Mechanics
CTPS	Central Transportation Planning Staff	MMLOS	Multimodal Level of Service
COBUCS	City of Boston Utility Coordination System	NACTO	National Association of City Transportation Officials
CCTV	Closed Circuit Television	OPC	Office of the Parking Clerk
CMR	Code of Massachusetts Regulation	PS&E	Plans, Specifications, and Estimates
CMP	Construction Management Plan	PMT	Program for Mass Transit
CLU-IN	Contaminated Site Clean-Up Information	PIC	Public Improvements Commission
DoIT	Department of Innovation and Technology	PROWAG	Public Rights of Way Accessibility Guidelines
DC	Direct Current	PWD	Boston Public Works Department
EV	Electric Vehicles	QR	Quick Response
EMS	Emergency Medical Services	RFID	Radio Frequency Identification
FHWA	Federal Highway Administration	ROW	Right-of-way
GHG	Green House Gas	TMC	Traffic Management Center
GPS	Global Positioning System	TAPA	Transportation Access Plan Agreement
HID	High Intensity Discharge	TIP	Transportation Improvement Program
HOV	High Occupancy Vehicle	VMT	Vehicle Miles Traveled
HCM	Highway Capacity Manual		