



Technology

Boston is a hub for technological innovation. With a robust technology sector and some of the best institutions in the world, Boston is well-positioned to continue to embrace technology in our city infrastructure and services.

We envision a responsive city where services are optimized for demand in real time and users' experiences are intuitive and personalized. We believe that smart technology will open up opportunities for new forms of public collaboration—from public datasets that spur new businesses and improve City services to infrastructure that allows democratized

street art. As Boston grows, smart infrastructure can enable us to use our fixed land area more efficiently and dynamically. The following initiatives will help us become a smarter city by laying a foundation for digital equity, investing in infrastructure in every neighborhood, and protecting our digital privacy and security.

Mayor's Office of New Urban Mechanics

The Mayor's Office of New Urban Mechanics, one of the leading urban-innovation groups in the world, coordinates many of Boston's smart-city efforts to ensure that projects prioritize the needs of residents and visitors to Boston.

This is what inspires us to act.

Many commercial districts already have smart features, including trash cans that can report how full they are, benches equipped to provide seating and charging stations, and Wicked Free Wi-Fi, the city's free, outdoor public wi-fi network. Wicked Free Wi-Fi is expected to expand to 130 access points over the next few years.⁴⁷

Wicked Free Wi-Fi will connect 20 neighborhood main streets through an estimated

130
access points

The City is using algorithms to determine how to deploy our resources more efficiently. The City is developing algorithms that match homeless individuals to housing, target restaurant health inspections, and improve the service quality of school transportation. Boston's Citywide Analytics Team works with departments across the City to find new areas where machine learning could improve service delivery and effectiveness.

Through CityScore, Boston is leading the way cities utilize technology. Today, cities can track data better than ever before. CityScore is a data-tracking initiative that charts the day to day metrics of Boston. The interactive CityScore tool and the data collected by the initiative help to ensure that all Bostonians receive high-quality, responsive municipal services.

The public has access to more than

140 datasets via the city's Open Data initiative.⁴⁸ As the City develops applications and tools, we have begun to release them as open source to share learnings with other cities and invite collaboration with members of the community. Residents have already proven to be active participants, proposing detailed suggestions for how to use smart infrastructure to improve the city and providing crowdsourced data on roadway safety hazards.

More than 20 percent of Bostonians do not have access to broadband at home.⁴⁹ Boston is working to close digital-equity gaps across the city by investing in City-owned infrastructure, training programs, and services to connect residents with low-cost broadband options. We are also working with the private sector to increase broadband investment and competition.

Soofa, a solar-powered bench with the capability to charge smart phones and collect air quality or other environmental data, at John D O'Bryant School of Mathematics and Science, Roxbury →



We will:

Lay foundational “smart city” infrastructure

We will pilot streetlights and benches that prepare our everyday city infrastructure for multiple functions, flexible lanes that shift purpose by time of day, and sensors and intelligent traffic signals that respond to real time conditions to improve safety and reduce congestion. We will enable smartphones and other devices to know street markings and parking regulations in real time, continue to support methods that lower the cost of building new fiber optic and other infrastructure, and expand Boston’s work on data security to protect users’ safety and privacy.

CityScore allows Boston to track the performance of City services dynamically.

TOPIC	DAY	WEEK	MONTH	QTR
311 CALL CENTER PERFORMANCE	0.97	0.93	0.93	0.92
CONSTITUENT SATISFACTION SURVEYS	0.54	0.69	0.86	0.86
GRAFFITI ON-TIME %	-	1.08	0.94	1.09
MISSED TRASH ON-TIME %	1.25	1.24	1.24	1.22
PARKS MAINTENANCE ON-TIME %	1.04	0.9	0.88	0.98
POTHOLE ON-TIME %	1.25	1.08	1.0	0.94
SIGN INSTALLATION ON-TIME %	0.63	0.6	0.91	0.83
SIGNAL REPAIR ON-TIME %	1.09	1.18	1.15	1.16
STREETLIGHT ON-TIME %	0.71	1.03	1.0	0.98
TREE MAINTENANCE ON-TIME %	1.17	1.17	1.18	1.18
ON-TIME PERMIT REVIEWS	0.89	1.07	1.08	1.05
LIBRARY USERS	-	1.43	1.43	1.34
BPS ATTENDANCE	-	-	-	-
BFD RESPONSE TIME	0.92	0.91	0.94	0.94
BFD INCIDENTS	1.15	1.12	1.08	1.07
EMS RESPONSE TIME	0.88	0.94	0.93	0.94
EMS INCIDENTS	1.1	1.07	1.08	1.06
PART I CRIMES	1.84	1.51	1.4	1.35
HOMICIDES (TREND)	-	2.14	2.37	2.77
SHOOTINGS (TREND)	1.87	1.64	1.76	2.08
STABBINGS (TREND)	3.1	1.81	1.92	1.69
TOTALS	1.2	1.18	1.2	1.22

Take action to improve digital equity

We will work to improve digital penetration, including working with the private sector to expand fiber access and improve access to public hotspots across the city, with a focus on communities that lack access. We will also host classes at Boston Public Library locations where Bostonians can learn computer skills.

Unlock new forms of public collaboration

We will expand efforts to open-source City data code and algorithms (for example, Boston’s CityScore and text processing), and organize infrastructure so Bostonians can more meaningfully contribute to everything from policy conversations to changes to the public realm.

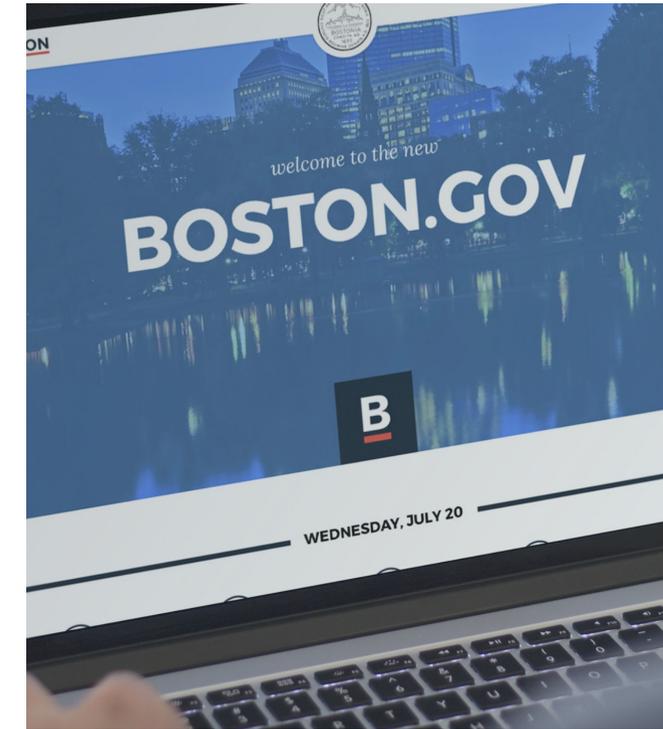
Build the city for continuous learning

We will strive to collect data continuously via both high-tech sensors and low-tech collection tools. This data will allow for real-time updates and rapid improvements to city services.

Make City services responsive to real-time data

This will include dynamically directing food inspections based on resident comments, using pavement conditions and street-use data to prioritize capital investments.

The City launched a new website focused on streamlining information, high accessibility standards, and plain language in July 2016.



Leverage CityScore to track the impact of City operations, policies, and initiatives

We will use CityScore to track the impact of our work and assess when we need to change course to ensure success. CityScore will enable the public to view how well the City is performing and weigh in on the metrics most important to them. It will also unlock greater collaboration with other cities through the evolution of global benchmarks.

Make every resident’s experience of the city personalized and intuitive

We will improve wayfinding for residents navigating everything from our city streets to our City website. We will adopt new technologies to make it seamless for residents to avail themselves of programs they qualify for whenever they interact with the City. We will interact with constituents on their terms and adopt new technologies to create friendly, convenient, and accessible digital experiences—on the web, on mobile devices, and with whatever comes next.



Better and more widely accessible Wi-Fi was a common theme in online and in-person comments on the topic of Programmable City in Summer 2016. Other themes included traffic signal timing that works better for cars, bikes, and buses, and optimizing more City services.

As a South Boston Waterfront resident commented, “Contract with smart trucking or service companies (sanitation, waste) that have dynamic routing to save time and gas when collecting.”

“Internet is a utility now just as important as water or electricity.”
Fenway resident via online mapping comments

“Enhance the efficiency of the green line B branch; technologies such as intelligent stoplight control, train right-of-way, GPS-enabled tracking for street-level portions of the line, etc., are a necessity.”
Brighton resident via online mapping comments