

ACTES

# New Urban Trends

International Seminar Boston

07/06/2016



# Data that benefits citizens

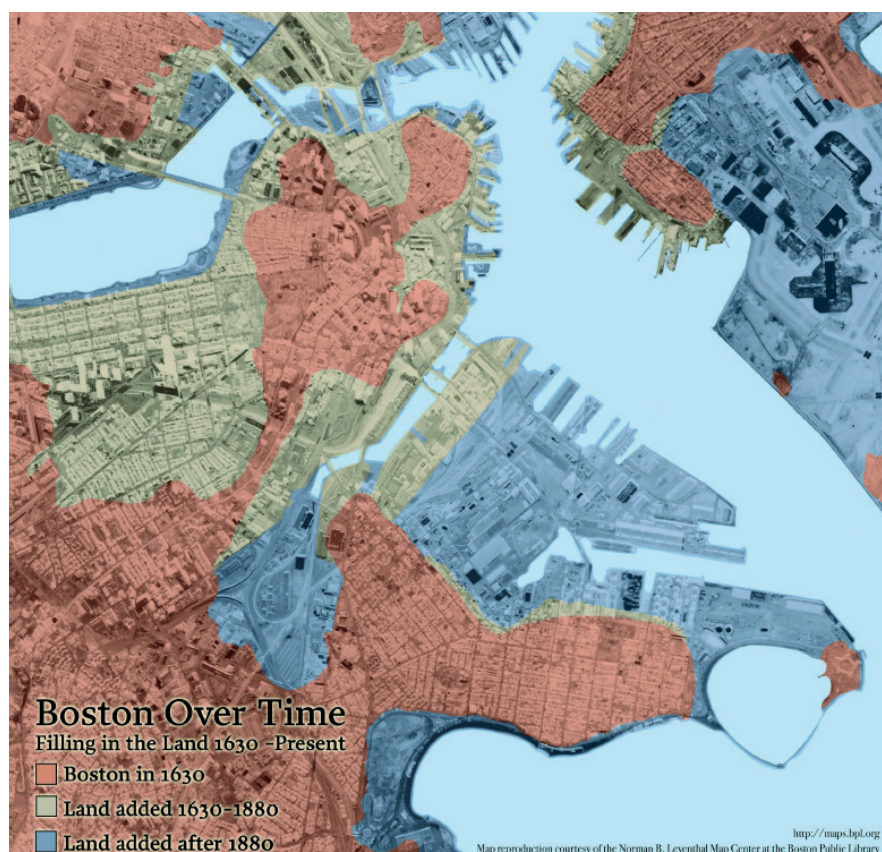


Jascha Franklin-Hodge  
Chief Information Officer of the City of Boston

On behalf of Mayor Martin Walsh, I want to welcome all of you to Boston. As Nathalie said, I have the pleasure of visiting Paris with La Fabrique de la Cité last year, and I hope you enjoy the visit. I am going to take you through some things. You have heard a little bit of an overview of some of what is happening in Boston, but I want to start by talking about some of the things that are going very well in our city. Then I will cover some of our challenges and some of the ways we are working to face those challenges.

First, we are a growing city. After decades of population decline in the 20th century, we have seen an upward trend in population numbers since about the early to mid 1980s. Most of the data that I will outline is about the city of Boston itself. You will also hear more about the region and some of the regional challenges and data later today from some of the other presenters. This interest in living in Boston and this growth that we have seen in population has led to the third great construction boom in the city's history.

The first boom happened primarily in the mid to late 19th century. Regarding the original shape of the city of Boston, there was an area that was reclaimed from the sea in the 19th century. This vastly increased the physical footprint of the city and it created a boom in development and construction. Much of what is considered historic Boston today is actually from this 19th century in fill project that took place.



The second great boom in construction came in the 1960s and 1970s and this was a very different kind of building boom. Even though the city's residential population was declining as suburbanisation took hold, there was a boom in development in the downtown core and it was primarily driven by office towers. That traditional suburban model was not traditional at the time. However, it was a developing model of a strong downtown core.

It had housing distributed throughout the metropolitan region, with people commuting into the city every day. This led to the creation of the city's modern skyline. It is often referred to as a high spine of tall buildings that runs from the Back Bay neighbourhood all the way downtown. You will probably get a chance to see this view, depending upon what routes you take into the city. As you go over the bridge into Cambridge, you can see the spine of tall buildings.

This was the second great boom in Boston development, but it was one that was based on a fundamentally different model of urbanisation and what the urban environment should be like. We are now entering the third great building boom in the city's history. Tens of millions of square feet of space is under construction right now. Billions of dollars of new buildings come on-line every single year. Unlike the previous building boom, this one is driven by reurbanisation. Much of the new construction in the core of the city is residential. It is serving a demand for urban lifestyles that are not built around the automobile.

There is a great example of this kind of project. It is a 2.3 millionft<sup>2</sup> development, which is a mix of residential, retail and commercial use. It is built on top of the skeleton of a parking garage from the 1960s era. It was built to support suburban commuters and is now being transformed into a mixed use project. This kind of development is happening all over the downtown of Boston as we rethink many of the physical structures that drove the 1960s and 1970s mode of development. However, this burst of construction is not only changing the look of the city's skyline and its downtown. All over neighbourhoods of Boston, 3-6 storey residential projects are being built in vacant lots, and industrial sites are being converted into housing. This is a shift and a growth that is happening citywide.



We also have, as one of our many strong assets, the academic institutions. Boston is well known as a centre for higher education. We have some of the best brands in the world for higher education, with schools like Harvard and MIT. However, the Greater Boston region is home to 50 universities, including eight major research institutions. Boston also benefits from a strong and diversified economy, with a particular concentration in technology, healthcare, biotech, financial services and tourism. Boston is an emerging leader in green energy, water technology and digital healthcare. We are actually second only to San Francisco and the Silicon Valley region for venture capital in this country. If you look at this on a per capita basis, Boston has the highest rate of venture capital of any region in the country.

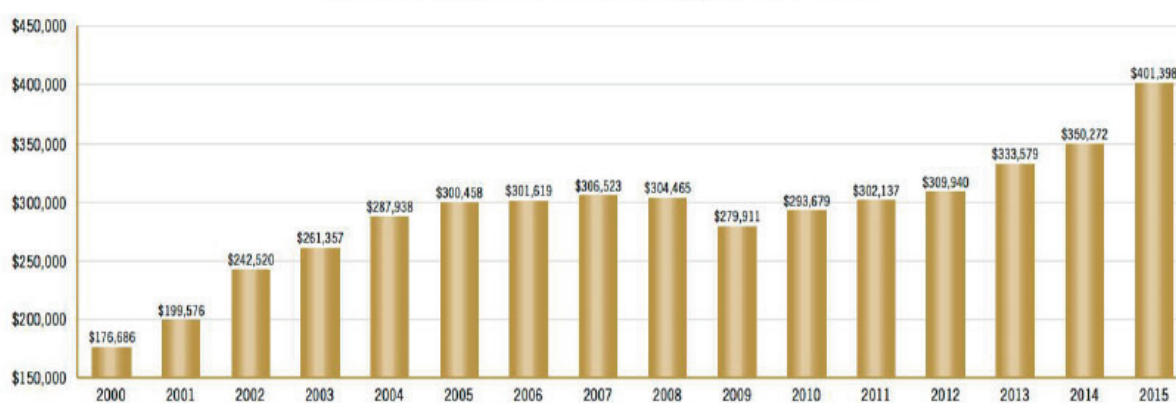
These are all tremendous assets, but we also face some great challenges as we deal with this wave of growth. The growth of the city has put a tremendous upward pressure on housing prices. I have outlined the growth in rental prices over a relatively



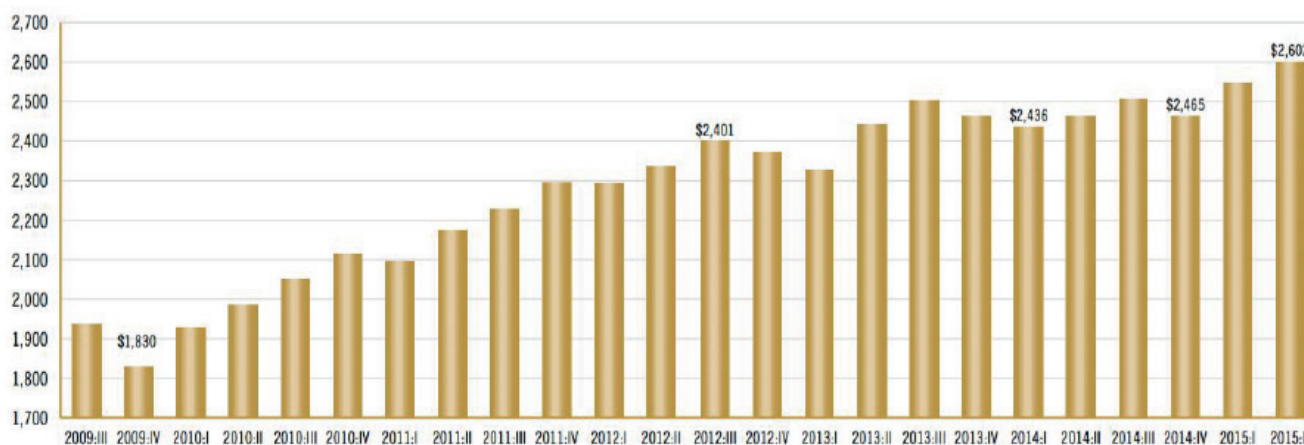
short period of time, just six years. I have outlined housing purchase prices over a longer span of time. We are observing that every segment of the housing market and every neighbourhood in Boston has seen increasing price pressure in recent years. Our rental vacancy rates are at historic lows. Neighbourhoods that were once the place where a young family, a recent college graduate or a new immigrant could get a start or a foothold in Boston are increasingly out of reach for these important communities.

According to a study from the NYU Furman Centre, only 29% of the available housing stock was affordable for a middle income family. Only 11% was affordable for a low income family. The City of Boston's housing plan has set of goal of building 53 000 new units of housing by 2030. We have made tremendous progress already, with almost 20 000 units in the development pipeline. Our hope is that by encouraging development, we will increase the supply and be able to stabilise pricing for housing. We will help reduce the negative consequences of this kind of increasing housing pricing. I have outlined the units under construction. We all know about the housing boom of the mid 2000s, but we are actually now building at a pace far in excess of even that period.

**Annual Median Price of Condominiums  
in Five-County Greater Boston Region, 2000–2015**



**Monthly Rent for Boston Area Apartments 2-Bedroom Units  
2009: Q3–2015: Q2**



Source: The Greater Boston Housing Report Card

Our transportation infrastructure is also struggling to keep up with the growth of the city. Our public transit system has a USD 7 billion maintenance backlog. This leads to decreased service reliability and a great deal of frustration from riders. The challenges of our public transit system were on full display last winter, when we had a series of major snowstorms. This more or less shut down the public transit system, or large parts of the public transit system in the city, for days on end. We saw lines of people waiting to get on buses or other forms of transportation simply to get into work and make it to their jobs.

However, it is not just the exceptional weather events that challenge us on our transportation. As we struggle with basic maintenance, we have also failed to increase the size and capacity of the system to stay ahead of population growth and development trends. In the Seaport neighbourhood of Boston, millions of square feet of new development have recently been built or will soon be constructed. Yet the neighbourhood has a very limited public transit service. It is clear though that the

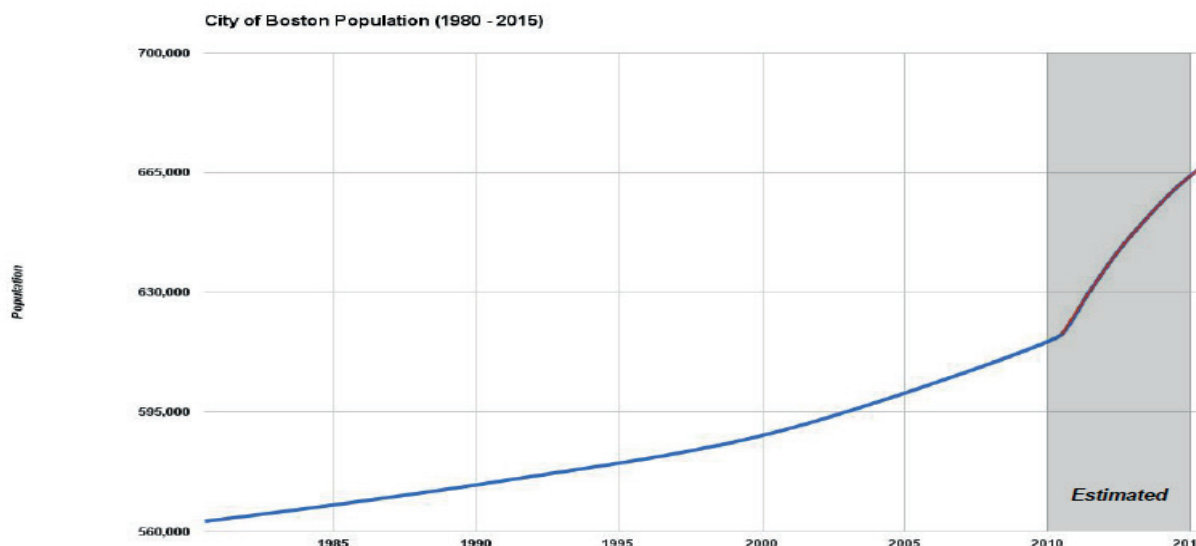
car centric approach, which was the focus of transportation planning for decades, will not continue to serve the needs of an increasingly urban city.



Boston is number one and first in many things and, unfortunately, inequality is one of them. Depending upon which metric you use, we are either first or third in inequality. This is something that worries us greatly in city government, especially because our economic growth and success is part of what is helping to drive this growth in inequality. The inequality is felt particularly in communities of colour. A recent report from the Boston Federal Reserve said that the average net worth of a white household in the city of Boston was USD 247 000. The average net worth of black family in Boston was USD 8. If you look at Latino families, they fare only slightly better, with an average net worth of USD 3 000.

These divergences are not necessarily new, but the way that our rapid growth is playing out threatens to exacerbate these inequalities that we see. Rising housing prices can push lower income residents to live further away from their jobs. It creates an additional cost and time burden from them as they seek to maintain financial stability and to help their family get ahead. You will hear a lot more about the work that we are doing to address these challenges from my colleagues today and tomorrow. However, I want to give a little bit more context to how we are thinking about policy making in this new era.

I talked a bit about our population numbers and I presented some information about these, but I want to cover a shorter period of time. We looked at the last 30 years or so of population growth. Keep in mind that all of the data from 2010 onwards are estimates from the US Census Bureau. The data prior to that are actually from the full Census survey, where they count actual people. If these estimates prove accurate, we are seeing that we have had almost as much growth in population in the last five years as we did in the previous 20 years. This is a rate of growth that is unseen since the early part of the 20th century in Boston.



Unfortunately, many of the tools that we have in government were not designed for an era of this kind of rapid growth. If anything, they were built for an era of de urbanisation, population decline and restructuring of the city to serve a suburban audience. We need to rethink the structures, the policies and the processes. This is to allow this moment of growth to produce positive benefits for the residents of Boston and to address some of those challenges that we talked about.

As we embark on a series of challenging planning initiatives, and you will hear much more about them, we are seeking new ways to work in the city. Boston's West End was demolished to make way for large scale urban redevelopment in the 1960s. A giant swathe of downtown was literally levelled to dirt. This was once a thriving neighbourhood and it was home to thousands of people. In many ways, it presents a case study of urban renewal and urban planning gone badly. This was an approach to planning and urban development that was top down and centralised. It was very much blind to the needs of the communities that it was supposed to serve.

The new model that we are seeking is one that finds a way to channel our growth in a positive direction, but it is looking at it with a new way to work. We aim to put the community first and use the principles of human centred design in our approach to planning. We value empathy and we recognise that those of us who are in City Hall do not have the right answers. We aim to involve the community in every aspect of the planning process and empower Boston residents to shape the future of their city. We make inclusivity and equity key goals across all of our work.



Even the space we are in today, the building, reflects this idea, this notion of inclusivity by design. This building was built not only to be the home of the city schools department. It was also built to play host to the Roxbury Innovation Centre. This is a resource that is intended to empower entrepreneurs in this local community and to use technology to connect people with economic opportunity. You will hear more about our planning initiatives later. Go Boston 2030 is our transportation planning project, which involved visiting all of the neighbourhoods of Boston and collecting people's questions and ideas about transportation.



We are also engaged in a citywide planning initiative called Imagine Boston 2030. When this is completed, it will be the first citywide master plan in 50 years that Boston has had. Far from the approach to master planning taken in the 1960s, which started with bulldozers, ours is starting with people, residents and conversations. This is to make this something that really has benefit and reflects the values of our larger community.

As we seek new ways of planning, we also recognise that we have new tools at our disposal. The rise of digital communications technology and big data give us incredible new opportunities to connect with our residents and to work with them to improve quality of life in Boston. We are starting with the city's website. Earlier this year, we launched [pilot.boston.gov](http://pilot.boston.gov), and, later this summer, this will become the main website for the City of Boston.

This is a major upgrade in functionality and design, but it also brings a fundamental change in approach. We built this site by involving residents from the very beginning. We learned about their needs and about their perspective on government services. We have continued to keep them involved, with a public pilot site that allows us to gather feedback and evolve our own thinking as we build out this important tool. This approach has led us towards a fundamentally new way to organise the site itself.

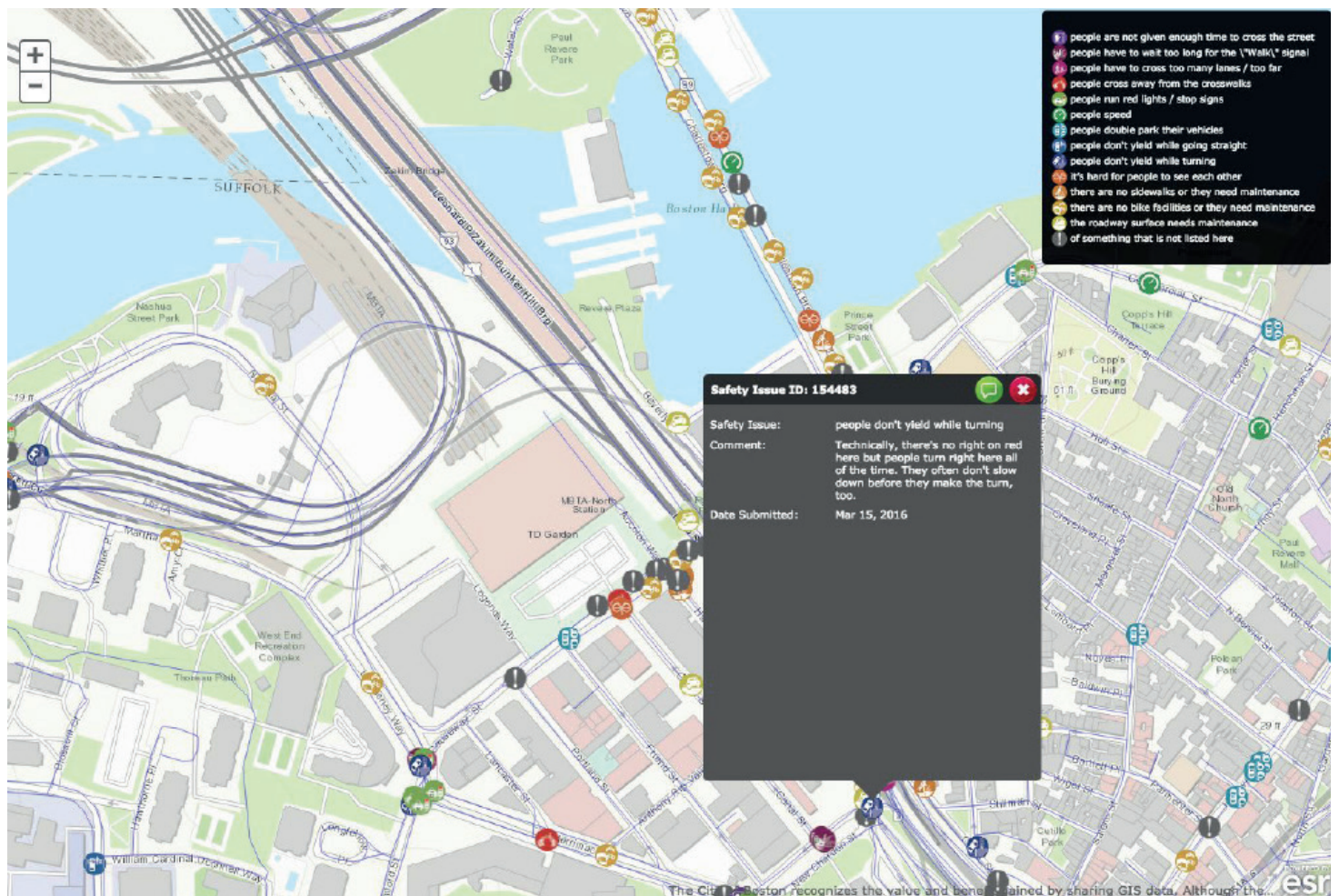
Traditionally, government websites are organised around the structure of government. Each department has its own page with whatever services or information it offers. However, let us imagine you are moving to the city or you are starting a business here. These things require you to interact with many different parts of government. Today, you would have to figure out all the different departments you would need to contact. You would have to navigate across many different parts of the website to get what you need.

With this new site, we are reorganising our content around the needs of our customer rather than around the structure of government. We have pages that make it easy to navigate topics that span many different parts of government, such as starting a business, buying a home and owning a car. All of these things will now be the fundamental organising principle of the city's website. This is rather than the transportation department, the assessing department for taxes, or any of the many other divisions we have within government itself.

Our long term vision is that this is not just a site, but also a platform for many kinds of digital engagement. Government is still learning how to use digital technologies to connect to their constituents. This is still a new realm and we are just starting to get familiar with it. One thing we are trying to do is crowdsource important data, information that can be helpful for us in our initiatives.

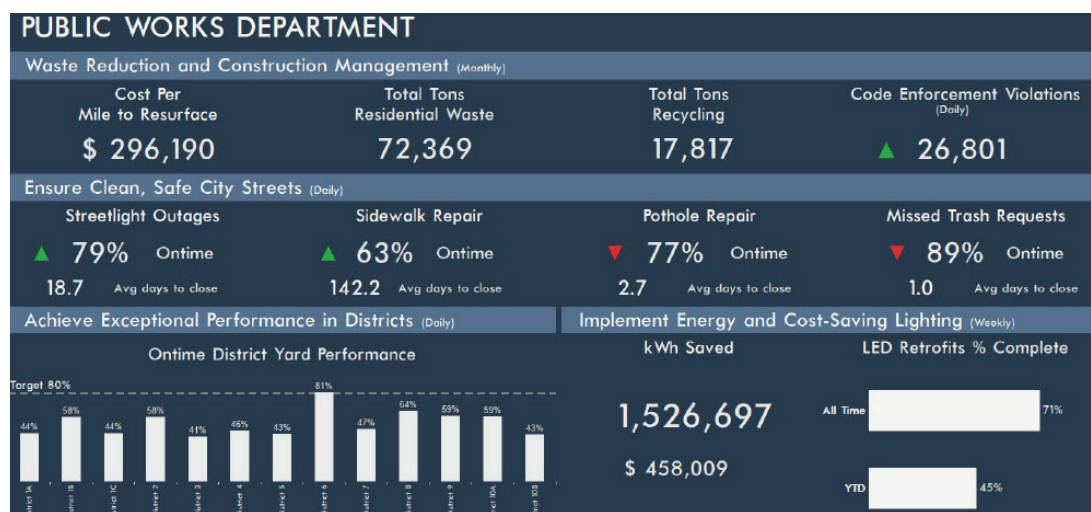
For example, there is our Vision Zero initiative, which is our roadway safety initiative with the goal of eliminating fatalities and serious injuries on our roadways. We have collected safety concerns from Boston residents. They have placed thousands of points on a map to tell us about dangerous intersections provide design suggestions and identify other hazards. We are reviewing specific suggestions as we plan roadway reconstruction projects.

However, we are also analysing the data we are gathering in aggregate, to identify areas where excessive speeding is present. We are finding corridors that should be the target of a series of focused safety initiatives. This is just one example, and as I said, we are in the very early days of using digital communications technologies to empower residents. We are very excited about the many future opportunities that we will discover.



Data analysis is also providing us with powerful new tools. At the most basic level, we are working to measure our performance across a broad array of goals. We created CityScore, which is a dashboard that lets the Mayor see performance relative to targets for a variety of city services. For each city service, we set a target. A score of one means we are hitting that target, higher than one means we are doing better and less than one means that we are not meeting our goal.

We regularly re evaluate these targets to make sure we are setting a high bar for ourselves in improving the quality of service. By condensing a lot of information about many different services into a single, easy to read dashboard, we provide the Mayor and managers with a quick way to spot problematic trends. A dashboard like this does not answer the question of why we might be underperforming, but it can highlight areas that need more attention from managers. To help us understand the why question, we have built a series of data dashboards for each of the senior executives within the administration. These dashboards allow them to see detailed information about the organisation and the various strategies and goals they have set for themselves. It gives them an important data driven tool to help them manage their workforce.





LEGEND 1 (FOLLOW UP) 1 (MAINTAINING) 1 (EXCEEDING)	CITY SCORE				LAST UPDATED 3/30/2016
	DAY	WEEK	MONTH	QUARTER	
LIBRARY USERS	1.79	1.62	1.62	1.66	
BFD INCIDENTS	1.63	1.64	1.35	1.32	
PART I CRIMES	1.57	1.50	1.39	1.39	
MISSSED TRASH ON-TIME %	1.25	1.25	1.23	1.22	
SIGN INSTALLATION ON-TIME %	1.25	1.00	1.15	1.02	
STREETLIGHT ON-TIME %	1.25	1.14	1.05	0.95	
ON-TIME PERMIT REVIEWS	1.24	1.17	1.18	1.15	
GRAFFITI ON-TIME %	1.13	1.16	1.20	1.19	
EMS INCIDENTS	1.01	1.06	1.07	1.10	
311 CALL CENTER PERFORMANCE	0.97	1.01	1.00	1.00	
EMS RESPONSE TIME	0.97	0.97	0.98	0.99	
BFD RESPONSE TIME	0.95	0.96	0.95	0.93	
SIGNAL REPAIR ON-TIME %	0.92	1.08	0.89	0.88	
CONSTITUENT SATISFACTION SURVEYS	0.75	0.79	0.94	0.89	
STABBINGS (TREND)	0.67	1.76	1.39	1.71	
PARKS MAINTENANCE ON-TIME %	0.42	0.99	0.94	0.90	
POTHOLE ON-TIME %	0.42	0.92	0.88	0.92	
BPS ATTENDANCE		0.96	0.96	0.96	
HOMICIDES (TREND)			4.82	4.51	
SHOOTINGS (TREND)		5.16	3.06	2.48	
TREE MAINTENANCE ON-TIME %		1.25	0.93	1.20	
	1.07	1.37	1.38	1.35	

Our long term goal is to give better tools to government managers, but also to bring about a culture change. We want leaders at every level of city government to think about their work and the impact it has on residents, from both a qualitative perspective and from a quantitative one. Beyond metrics and visualisation, we are using data in interesting ways to help implement policy. We have a data sharing partnership with the company Waze and that is helping us to manage our roadways better. We can use Waze data to identify and quantify traffic congestion.

This has allowed us to measure the impacts of various policy changes. By adjusting the traffic signal timing, we have been able to reduce traffic congestion at certain key intersections by almost 20%. Waze helped us identify places that needed intervention and allowed us to measure the impact of the changes that we made. We are experimenting with providing traffic signal priority to buses and other public transit vehicles. The data from Waze helps us to measure the impact that these changes have on the roadway. We can look at GPS data from the bus to understand whether we are making the bus faster, and we can evaluate whether the changes we made have a negative impact for vehicular traffic that may be passing a bus corridor.

We are also experimenting with more predictive analytics tools. For example, we are looking at new approaches to prioritise food safety inspections for restaurants. By using predictive analysis, we hope to identify restaurants which are most likely to have food safety violations. This means that we can focus our resources in the places where they can do the most good. This technique holds a great deal of promise across a variety of different government services and processes.

This is an exciting movement for Boston and our city is strong and growing. We have many challenges, but we have new tools and new ways of working to help us. You will hear from many of my colleagues later today about the work that is being done in city government. You will hear from others in academia and industry who are helping Boston and cities around the world continue to grow and thrive.



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