

CITYWIDE ANALYTICS TEAM

2015 YEAR IN REVIEW

THANK YOU TO THE TEAM

"We have had a tremendous year **using data to deliver the best possible services** to improve the quality of life for all Bostonians. I thank the Citywide Analytics Team for their work and am excited by the boundless possibilities that lay ahead."

– Mayor Martin J. Walsh

"From **reducing firefighter injuries by combining and visualizing multiple sources of hazard data**, to **engaging the public through open data**, I thank our team for continuing to use data to find new ways to improve the lives of Boston's citizens."

– Jascha Franklin-Hodge, Chief Information Officer

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Alex Lawrence
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Chris Dwelley
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OUR MISSION: TO IMPROVE QUALITY OF LIFE AND ENHANCE CITY OPERATIONS

The Citywide Analytics Team focuses work in **four key service areas**. In collaboration with Cabinets, the Citywide Analytics Team identifies existing challenges and potential areas for analysis, visualization, or experimentation.

Performance
and Process
Management

Pilots and
Product
Development

Data Viz and
Dashboards

Open Data
and Public
Engagement

EXECUTIVE INSIGHT

One of the Citywide Analytics Team's top priorities is providing City leadership with data where and when they need it. In place of monthly or quarterly reports, we are working to provide the Mayor and Cabinet Chiefs **up-to-date daily and weekly metrics** and progress toward goals on dashboard screens.

In 2016, we will work to provide these dashboards on tablet and mobile devices as well as on publicly viewable screens in City buildings.



The Mayor's 311 screen refreshes **every 5 seconds**, showing the latest and most frequent citizen service requests.



7 out of 12 Cabinet Dashboards have launched to Chiefs and Commissioners.

CITYSCORE

The public launch of CityScore in January 2016 initially included **20+** metrics updated daily.

OPTIMIZING PERFORMANCE AND PROCESS

The Citywide Analytics Team works across 14 Cabinets with Chiefs and staff to help identify pain points and develop both immediate and potential long-term performance and process improvements. Below are two examples of our work.

VISUALIZING FIREFIGHTER SWAPS

In partnership with the Boston Fire Department (BFD), the team launched FireStat, a web tool that enables **HR staff to quickly view up-to-date shift schedules**. Since the launch, BFD has identified multiple instances where improper time keeping has taken place because of the greater insight into staff time and hours worked. Now BFD is better able to **identify errors and immediately correct them**, ensuring that firefighters aren't working beyond the recommended number of hours, ultimately increasing safety.

REVEALING MOVING TRENDS

The team worked with the Public Works Department (PWD) and the Boston Transportation Department (BTD) to bring the in-person moving truck permit application process online in time for the September 1st moving rush. **38% of moving truck permits issued around September 1st were applied for online**. The team provided **up-to-date reporting to enable department heads to make better decisions** during this busy time of year. The departments were able to make improved decisions around street sweeping and trash clean-up, leading to a **cleaner and calmer moving season** for all residents.

COMING IN 2016...

Unearthing Zoning Code. Want to repair your roof deck? Wondering why restaurants in your neighborhood are located where they are? We are building digital tools to help the public better understand how the City's zoning affects their plans.

Predicting Health Violations. Getting sick after a night out at your favorite restaurant is no fun. We are working to prevent this by building a model to identify where risks of potential food-borne illnesses are high.

Making Sense of Finance. Paying bills and procuring services is more complicated than you may think. We are building visual tools to show the City's budget and financial information quickly and effortlessly for those that depend on the information every day.

Proactively Engaging with Residents. What if the City told you about key services without you having to ask? We are using analytics to identify the most sought after city services and delivering this information to your inbox and mailbox.

Fighting Addiction. Mayor Walsh is committed to fighting the opioid crisis in the City. We are using analytics to identify individuals likely to overdose, so that we can intervene and assist with recovery services.

Equipping City Staff with Digital Tools. Next year we will equip our Neighborhood Services Coordinators with mobile displays of critical City data. These mobile tools will provide coordinators with local information at their fingertips during their engagements with the public.

CITYWIDE ANALYTICS TEAM

2015 YEAR IN REVIEW: A FEW OF OUR PROJECTS



CONNECTING DATA TO PREVENT FIREFIGHTER INJURIES

At the City of Boston, our firefighters and public safety officials provide fire protection and first responder emergency medical services to 650,000 residents. To help prevent firefighter injuries, the City's Analytics team worked in collaboration with the Boston Fire Department (BFD) to **build an application that combines and visualizes multiple sources of building hazard data**. Built using open source code, the web application allows users to explore the buildings and streets surrounding an exact location.

Beginning in January 2016, members of BFD Dispatch **will be able to look up a building location and provide up-to-the-minute hazard information to the engines responding**. Working alongside BFD employees, we built a tool that allows users to quickly see all nearby hazards through satellite imagery and street view images. By summer 2016, we plan to deploy the application on tablet devices, allowing officials responding to a fire to view the application while mobile.

Reduced Traffic Jams
By 18%

3 Month Period
Seaport Blvd & Atlantic Ave
Adjusted Traffic Signals

Decreased Commuter
Delays by 20%

3 to 2.4 Minutes
Mass Ave & Beacon St.
Added Bike Lane

IMPROVING TRAFFIC FLOW USING WAZE DATA

Working with the Boston Transportation Department, we have made tremendous progress analyzing traffic patterns and evaluating the effectiveness of interventions on City streets. Data provided by the traffic navigation application, **waze**, has allowed us to experiment with pilots including **bike-mounted parking enforcement officers** that target areas where double parking is reported in volume, as well as understanding the effectiveness of protected bike lanes and signal phase adjustments at some of the City's most challenging roadway segments.

Looking toward the future, we will be aiding in collecting, storing and analyzing data to support the City's Vision Zero efforts, helping Boston address serious injuries and fatalities resulting from crashes on our roadways.

IMPROVING CITIZEN ENGAGEMENT AND SATISFACTION

The Citywide Analytics Team **developed and launched constituent satisfaction surveys** for residents after they have reported issues through BOS:311. By communicating with residents and asking for their feedback on how departments can further improve service request responses, Boston continues to speak with and learn from its residents. To complement this effort, in early 2016 the Citywide Analytics Team will **provide Departments with up-to-date visualizations** of survey results. With more up-to-date survey information, Departments can better understand and respond to resident evaluations of the quality and timeliness of City services.



CONTINUOUS PERMITTING IMPROVEMENTS

1 WEEK

Reduction In Time To
Review Building Permits

From his first day in office, Mayor Walsh has worked to make Boston's permitting and licensing process clearer, predictable and more transparent. In 2015, the dedicated permitting team has continued to improve the experience for those who live in and do business in Boston. This year, work has included deploying a mix of smart technology, providing better reporting and dashboards for management, and working with departments to improve business practices. We **have shortened wait times for permits, streamlined the appeals process for small businesses and homeowners, released tools to help people check-in on their permit status**, equipped building inspectors with **mobile tablets**, created management-level, **interactive dashboards** for commissioners to continue to drive improved performance, put additional permit-types online, and even removed a typewriter or two.



ENGAGING THE PUBLIC THROUGH OPEN DATA

With tremendous support from the **Knight Foundation**, in 2015, we were able to stand up a dedicated team to actively investigate ways to bring more life to Open Data because data by itself is often difficult to understand without some issue or context to give it meaning. This philanthropic funded initiative, called the **Open Data to Open Knowledge** project, seeks to address this issue by broadening the use of data across the City of Boston **by partnering with the Boston Public Library to re-imagine the city's data as a valuable resource for public knowledge**. In the year ahead, we seek to inventory the vast array of datasets citywide, **create the city's first ever comprehensive data catalog**, and provide intuitive access to all users. Once in place, these mechanisms will deepen public engagement and move Boston to the forefront of the open government movement.



SNOWSTATS - LET IT SNOW, LET IT SNOW

In partnership with the Mayor's Office of New Urban Mechanics, the Citywide Analytics Team created **SnowStats**, a public-facing snow tracking tool. In near real-time, SnowStats shows a snowmap with specific information related to **plow drivers who are assigned to nearby streets, how long they have been on duty, and general statistics on citywide snow cleanup**. The site also shows progress metrics and weather information including precipitation and temperature. Since SnowStats launched in February 2015, it has served as a tool for the Public Works Department to be **more transparent in their snow response efforts**, and a tool to aid citizen engagement in the City's snow response efforts.