CITYWIDE ANALYTICS TEAM

*2016 Summer Fellowship Program Projects*

311 Response Prioritization.

Using the City's streetlights as an example, a model was developed to prioritize and allocate resources toward responding to 311 requests. The model incorporates the condition, impact, and equity of each asset and its repair, and could eventually be applied to a variety of different city services.

BostonNLP.

Originally created as a Python package to bring reusable natural language processing tools to developers and analysts, this project expanded in scope to include the BostonNLP app. The simple to use application allows non-technical users to gain insights from textual data through a point and click interface.
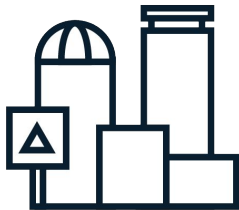
New Resident Engagement.

What is the best way to improve civic engagement among new Boston residents? This question was the main driver behind an outreach campaign which used A/B testing to determine what types of issues new residents are most likely to be interested in, which communication methods are most successful in reaching them, and how these factors impact their future level of civic engagement.

Daily Transportation Report.

The Chief of Streets' daily transportation report displays traffic jams in the City by examining a variety of different transportation data. Using the Shiny package in R, this report was transformed from a static document to a more interactive and informative dashboard.

Diversity in Recruitment.

Diversity in the City's workforce is an important factor in being able to represent all of Boston. To further that goal, the Diversity in Recruitment dashboard provides not only statistics and trends on current City workers, but also provides similar information on applicants being considered for open positions.

CityScore Toolkit.

Following the implementation of CityScore in Boston, the CityScore toolkit was developed to make the popular performance metric shareable, accessible, and even more informative. The toolkit can be accessed and used through a variety of different configurations, and can also be customized visually according to the user. Check it out here.

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Paid Parental Leave.

Following the implementation of Boston's Paid Parental Leave policy in 2015, data was collected on 39 employees to examine how different individuals used their time off, and how the policy was being received. Working with the Office of Women's Advancement, various trends were reported on related to usage rates, patterns, and satisfaction levels with the policy so far.

BFD Permitting.

Furthering the utility of the Boston Permits & Licenses portal, four Boston Fire Department permits were moved onto the portal using a documented procedure which can be carried over to other departments and permit types. By working with various stakeholders, the improvements aim to reduce manual work in the permit process for both constituents and the fire department.

Sex Trafficking.

Building off existing efforts to identify unique data sources that can be used to estimate supply and demand for paid sex, a dashboard was created to gather and visualize this type of information on a local level. The dashboard not only helps support the City's response, but also displays statistics on prior police actions.

Street Asset Financial Models.

ARIMA modelling was used to estimate costs for maintaining a "state of good repair" for two essential street assets: traffic signals and pavement markings. The findings could impact operational and long-term budgeting outcomes.

Housing Starts Classification.

In bringing machine learning to permit classification, a custom module was developed to identify permits sent to the Department of Neighborhood Development as potential housing starts. By replicating the entire classification process, the ML module seeks to reduce the manual effort required for this task each week.