CITY OF REVERE
www.revere.org

Locating Traffic Accidents in Revere

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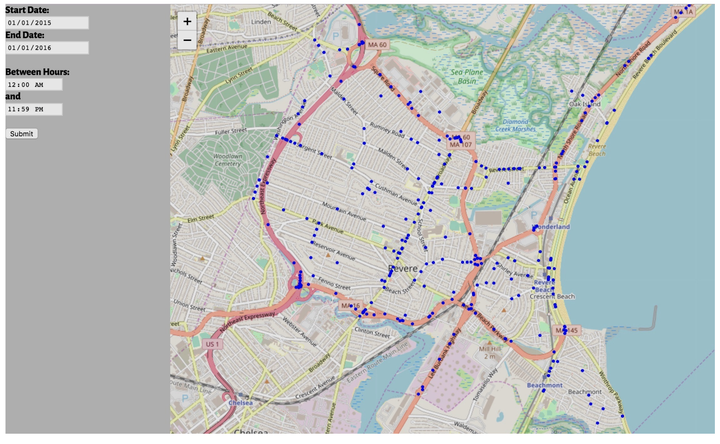
Introduction:

We partnered with the city of Revere to analyze data sets relating to traffic accidents so that we could potentially identify a way to prevent future accidents while investigating and computing statistics that could be gathered from the provided data .

Goals:

- Provide the functionality to geospatially map the traffic accidents and display them in an interactive format with filter options.
- Analyze the time evolution of the accidents within the city and consider potential causes while taking into account the level of severity
- Compare the traffic safety of Revere with other towns of similar demographics in eastern MA

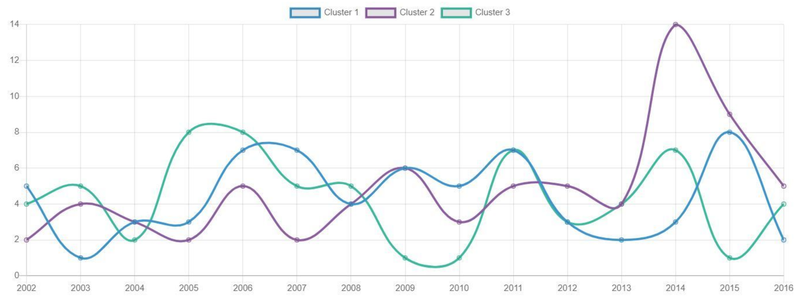


Data Used:

- Accidents In Revere (2001 - 2016)
- Accidents in Revere(1999 - 2000)
- Accidents in Revere(2000 - 2001)
- Accidents in all towns, MA (1990-2016)

Source: Sets provided by Spark! Partner

Number of Crashes Within Three Largest Clusters Per Year



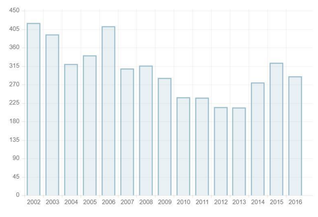
Procedure:

In order to meet our goals we performed the following steps:

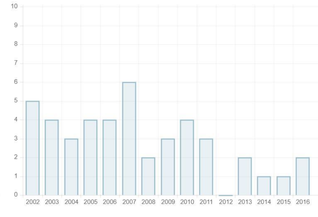
1. Data collection and Analysis: Compiling and understanding the data sets along with formatting and importing the data
2. Statistical Analysis: analyzed most common causes of accidents, the trajectory of the vehicles and the severity of the accidents. Created data visualizations of these statistics and how they evolved over time.
3. Clustering: used the geographical locations in our data sets to perform K-means clustering. Performed statistical analysis on the clusters and their evolution over time.
4. Mapping: created a web application to geospatially map and display the accidents in Revere with a filter functionality

Results:

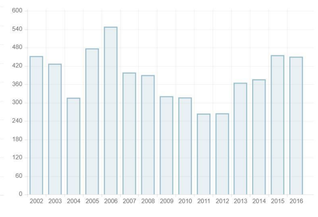
Number of Non-Fatal Crashes Per Year



Number of Fatal Crashes Per Year



umber of Crashes Yielding No Injuries Per Year

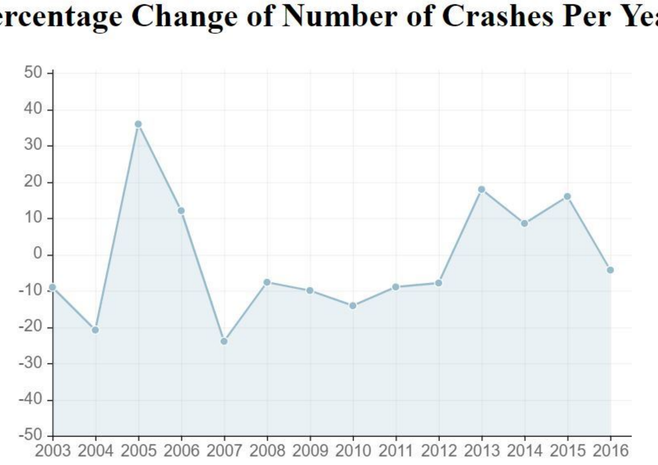


Observations:

Our statistical analysis has provided us with a large amount of takeaways, some of the most important are below:

- Revere's total numbers of accidents have decreased over time moderately.
- The severity of the accidents has remained constant
- 2005, 2011, and 2014 were peak years, and certain areas of the town suffered more.

Percentage Change of Number of Crashes Per Year



Conclusion:

Our analysis has allowed us to identify the main hot spots for accidents in the town, and the way they have evolved. This information can be used to determine which safety policies have been effective in the past and could be repeated across the town in the future.