

Optimal Placement of New Parks in Boston Neighborhoods

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About

The placement of public resources is never an easy task. This project focuses on the optimal placement of new parks throughout select neighborhoods in Boston and the effects open spaces have on a community's overall health. We favor areas that are farther away from open spaces and unhealthier areas. We hypothesized that if these two factors were correlated, then this would provide of justification for favoring unhealthier areas for possible new locations to put a park.

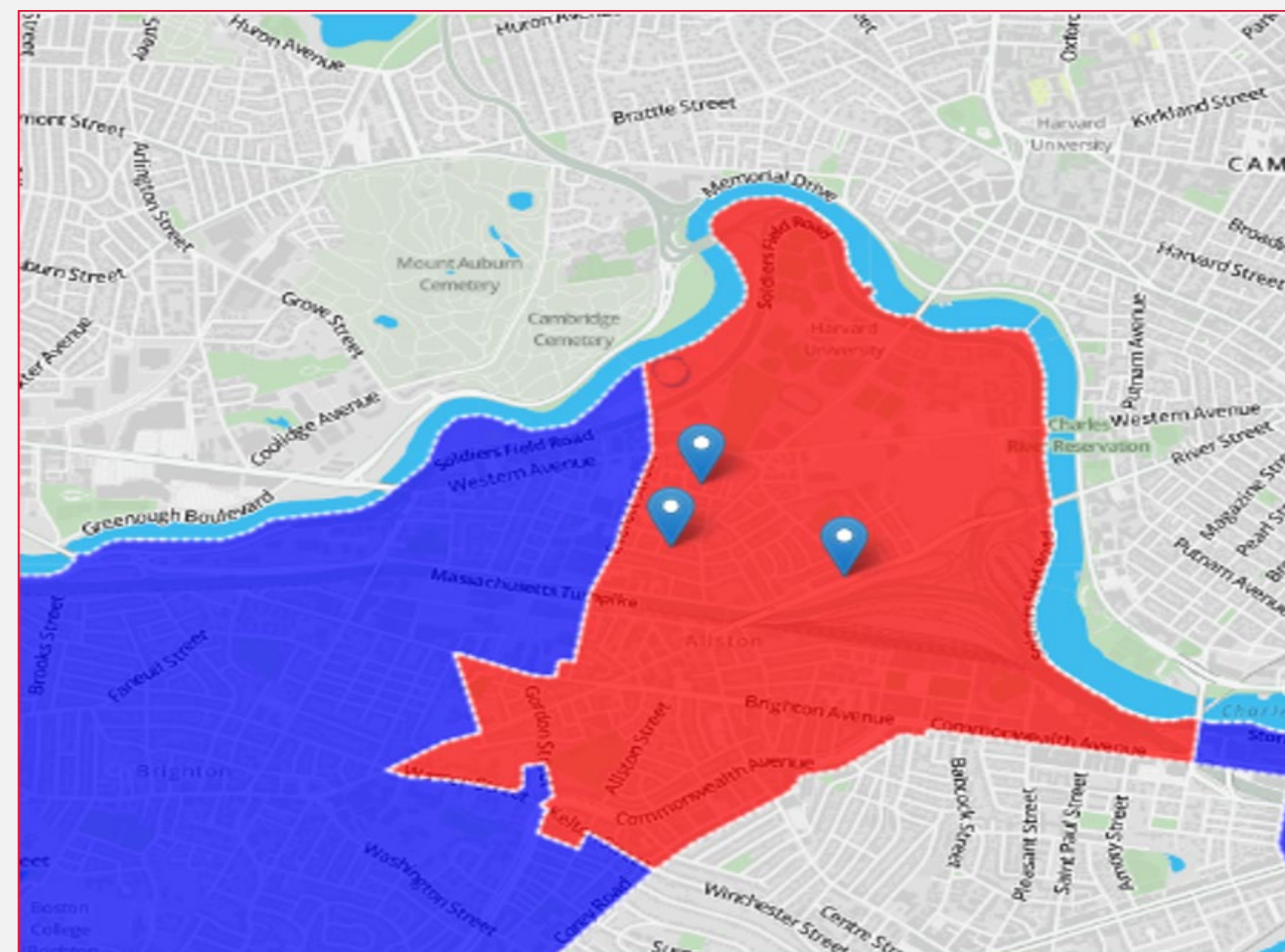
Goals

The goal of this project was to optimally place new parks in Boston neighborhoods. To determine where the best place to put new parks are, we focused on two factors; one being an area's current access to an open park, which was determined by the distance to an open space, and the second being the area's health.

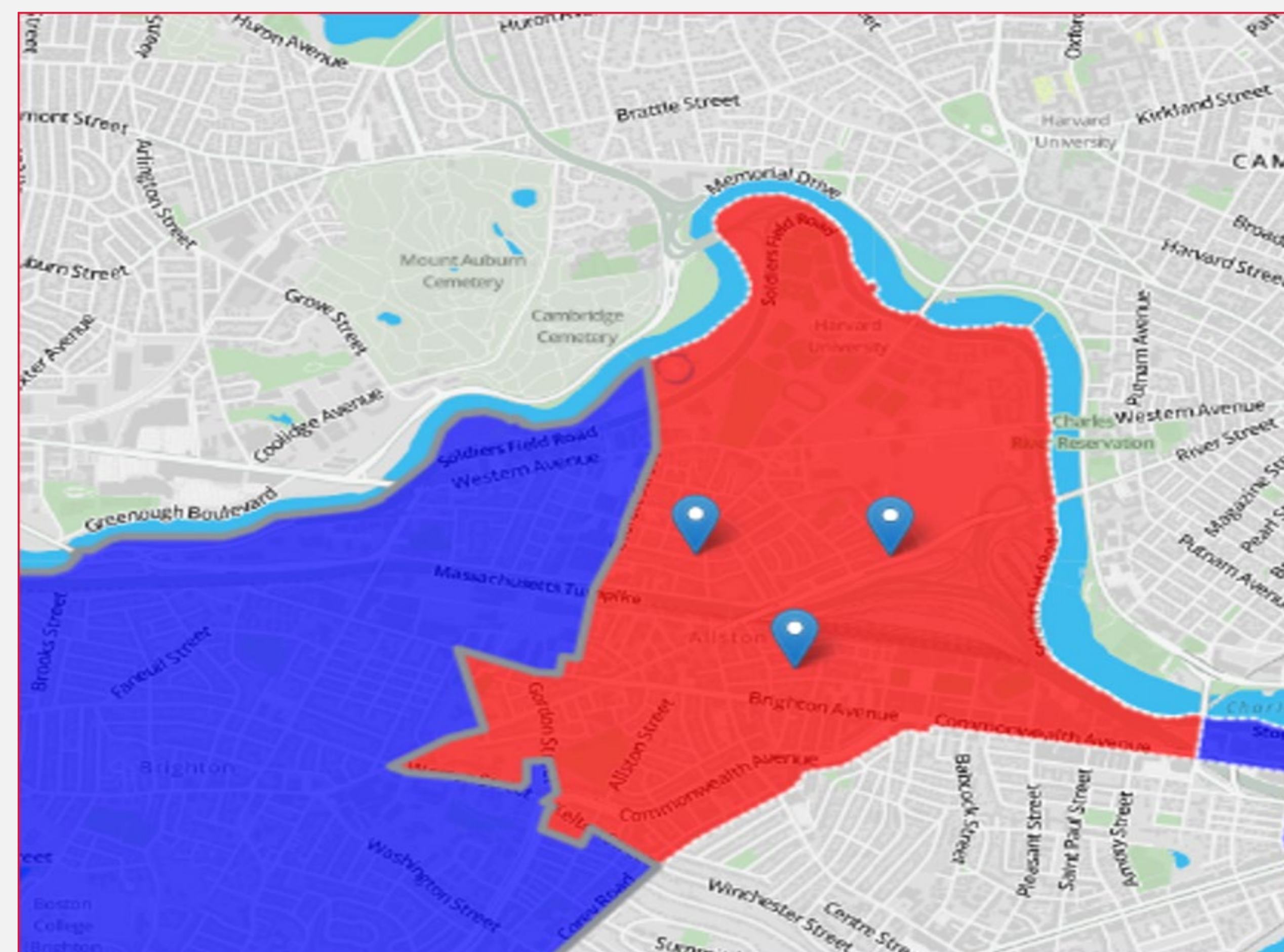
Method

Our project utilizes a weighted k-means approach to favor places areas that have less access to open spaces or unhealthier areas. we retrieved six different datasets from 3 different data sources transform them to be usable, and then we compute a weight for each parcel within neighborhood according to a metric we are interested in then add that many points to the collection of points that we would run k-means on.

K-Means based on Health Score

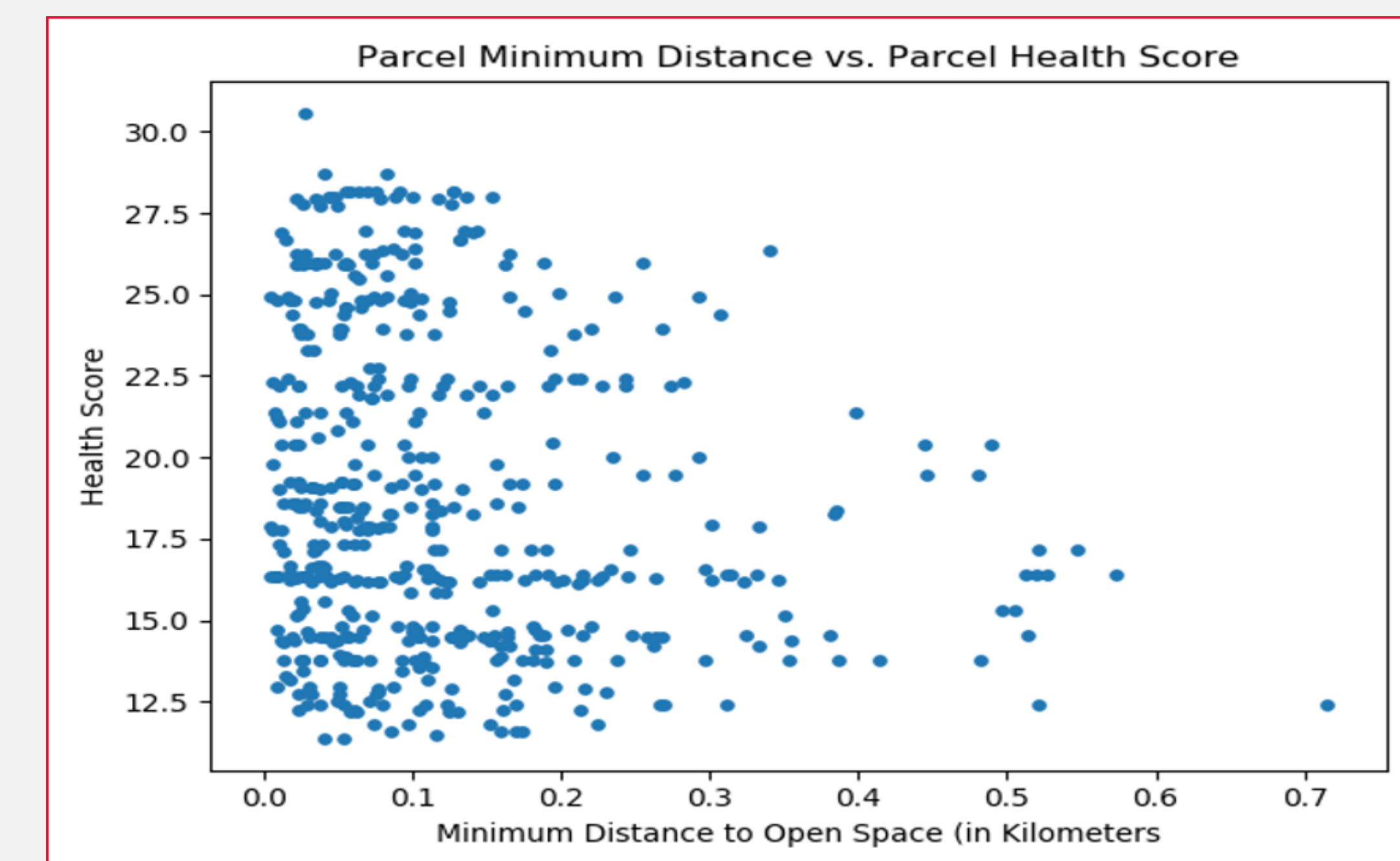


K-Means based on Distance Score



Result

We observed that many neighborhoods exhibit a negative and statistically significant correlation between the minimum distance to an open space and each of the health statistics. This would line up with the data and our belief that the lower the access to open spaces an area has, the higher is health score is, or in other words the unhealthier it is.



Conclusion

In this project, we aimed to find the best places to place new parks in Boston neighborhoods based on various health statistics as well as access to open spaces. In completing this project we have only presented one of the ways we believe that new parks can be placed in Boston Neighborhoods. We believe that the framework which we built can be extended using other datasets and to prioritize other metrics when choosing locations for new parks.