Organization Name: Booz Allen Hamilton
Dataset Name: Recycling Diversion
Team: DC20069

Abstract

In recent years, even after numerous initiatives for recycling, thousands of landfills still remain open in USA. Statistical data on improvement of waste collection shows that 1 ton of recycled paper can save 7000 gallons of water, 4100kw-hour in energy, 3 cubic yard of landfill and 17 trees; recycling 1 ton of glass saves 10 gallons of oils and recycling 1 ton of aluminum saves 2350 gallons of gasoline. We can restore our natural resources for future generations by recycling. Since New York is one of the most densely populated cities in the USA, our analysis of the NYC waste collection data will help the dataset provider, Booz Allen Hamilton, explore facts about diversion rate patterns, districts which produce more recycled waste and a variety of factors that may impact the diversion of recycling material from the total waste.
In this project, along with the given dataset which provides the district-wide diversion rate and percentage of recycling over time, we have taken some additional datasets from NYC Open data. These datasets are:

1. Population by district
2. Income level by district

Looking at these dataset features would help find answers to these questions:

1. Do factors like weather across years impact the recycling in a district?
2. Is the recycling rate of any particular material higher because it is easily differentiable?
3. Does higher population density reduce diversion rate of recycling?
4. What are the effects of income level on recycling diversion rates?

We plan to find any correlations between these factors and waste diversion rates so that effective initiatives can be taken to benefit the city's public health and improve the environment for its citizens.

Finally, we aim to understand various factors that contribute to the recycling diversion rate from this exploratory data analysis and built a machine learning model to predict zones which require more initiatives to encourage recycling. As millennials, we are invested in producing an analysis that will lead to building a sustainable ecosystem by improving the quality of our health and surroundings, and thereby contribute to more sustainable communities.