DC20015 Abstract

We selected the MWCOG Traffic Counts dataset, which contains data from over 800 traffic sensors in the DC metropolitan area. This data is broken down by vehicle type, including passenger cars, buses, and single unit trucks.

We began our analysis by importing the data into Tableau, which allowed us to determine an overview of traffic conditions. We then used ArcGIS to combine the base dataset with additional sets obtained from the MWCOG clearinghouse and ArcGIS's dataset search feature to find patterns in the data. One such pattern, the population distribution of Northern Virginia, gave us an explanation for the I-395 bridge's traffic due to that relatively dense population needing to commute to work in DC, which according to the same dataset features a large concentration of employees.

With the single unit trucks data, we located a strange sensor reading at the intersection noted in the introduction. This reading, which indicated that over 6,000 trucks had passed that sensor going south during rush hour, is not supported by the surrounding sensors, which reported significantly lower single unit truck counts. We also created a histogram of single unit truck counts using Tableau, which places the suspect sensor at the far right end of the histogram. Due to this, we determined that the sensor is an extreme outlier, and are skeptical that it represents an accurate count of trucks at that location.

As transportation made up 23% of DC's greenhouse gas emissions in 2017, efforts to decrease congestion and reduce the number of cars on the road would lead to a significant

decrease in those emissions. Through increasing capacity on Amtrak and Metrorail, as well as constructing a new bike route over the Potomac River to encourage more biking to work, commuters would be encouraged to choose cleaner forms of transit.