CET521/INDE546 Inferential Data Analysis for Engineers Project Proposal

Group Members: Jerome Wong, Vaibhavi Lashmi Segu, Yinsheng Kou

According to WSDOT, there was a decrease in traffic from 2019 to 2020 i.e., during the Covid-19 pandemic, the traffic rate decreased in Washington state, even though there was a decrease in traffic rate, the accident rate i.e., deaths on highways had increased by 20% in 2020. Even though there is an increase in standards of design the accident rates have been increasing year by year.

- A specific, testable, research question

Here in this project, the main aim is to know what is the rate of increase in crashes in the City of Somerville from 2013 to 2018 with respect to what time the accident occurred, what was the collision type, what were the different accidents that had occurred, which includes accidents between 2 different vehicles or the same vehicles or is it happening between pedestrian or bicyclist and a vehicle. Also, many other factors like weather conditions during the time of the accident, vehicle type or configurations that were involved in the accidents, what actions contributed to the crash (this would include if the driver was drunk, or if the driver exceeded the speed limit), intersection type and road surface condition.

- What data you will use, and how you will obtain the data

For comparing all these different factors Somerville crash data will be used. It can be obtained from the website called data.world

- What analytical methods you foresee using, and what you expect will be the independent and dependent variables

At first, the relationship between the time and other factors have to be compared, for this Linear regression model to be used. The dependent variable will be the time and the independent variable will be the factors which caused the crash.

- How you will interpret your results and what contribution your analysis will make to knowledge of the system studied (i.e. how will the results be useful?)

Using this data, future forecasts of the accident rates can be done based on what time the accident rates will increase, and how will the crash rates increase based on considering different factors.