Problem

According to the Insurance Institute for Highway Safety (IIHS), motor vehicle collisions in the United States are responsible for roughly 35,000 deaths each year. In order to determine improved vehicle safety guidelines, we analyzed data to answer these business questions: can we predict the severity of traffic accidents based on the light conditions, and is there a statistically significant correlation between the level of light at the time of an accident and the severity level of the accident? With this information, we can make recommendations pertaining to the optimal amount of public lighting infrastructure in a neighborhood.

Data

For this business case we will be utilizing the Seattle vehicle collisions data. We will incorporate the collision severity data per crash, the light conditions at the time of the crash, as well as generalized data on where the crash occurred: intersection, block, or alley. These will allow us to determine the correlation between light conditions and total number of collisions, as well as determine which part of a street is most heavily impacted by the current lighting conditions. We will then determine the impact of light conditions and street location on the severity of the crash. We will assess the data using common data science techniques and statistical modeling.