

Ethiopia Addis-Adama Expressway

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Main observations

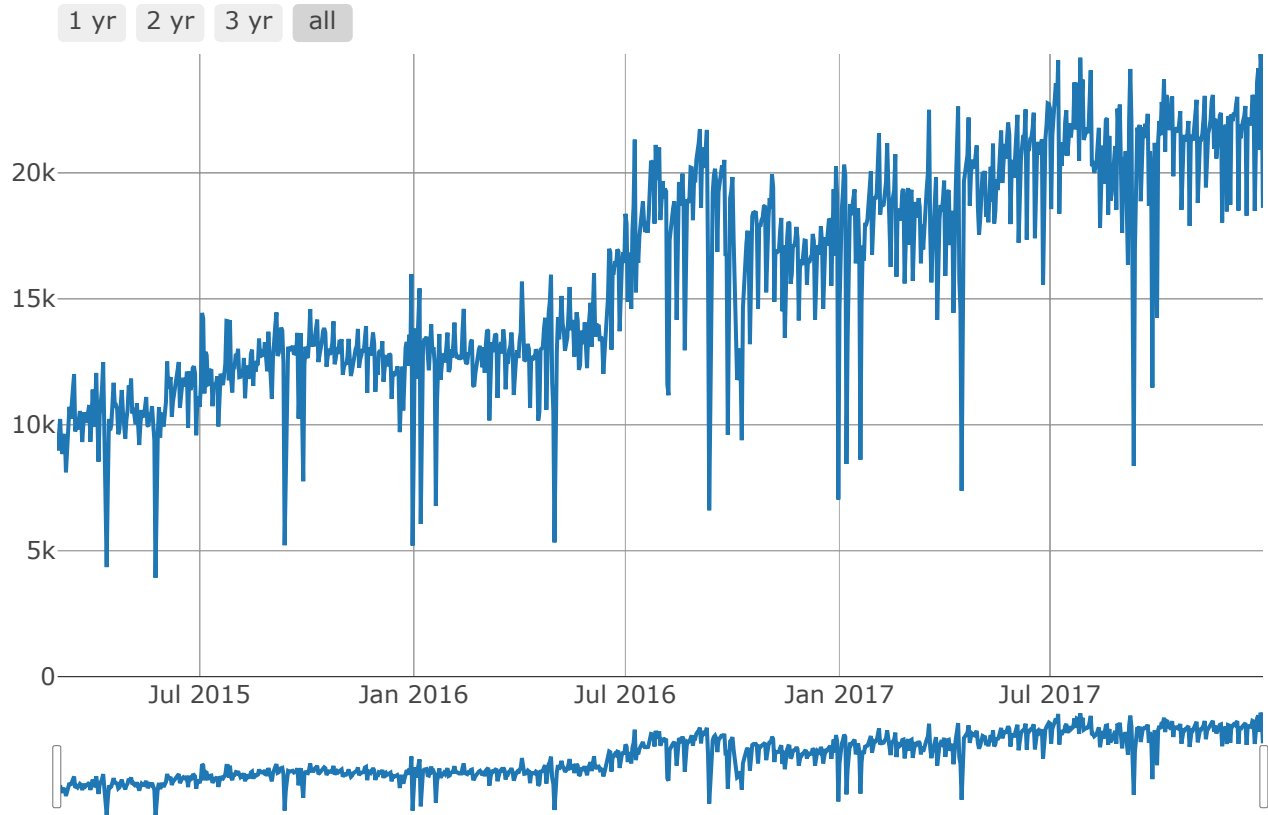
The key observations from this analysis include:

- The amount of traffic on the Addis Ababa expressway has nearly doubled from about 10,000 daily users in early 2015 to over 20,000 users in later 2017.
- With the rise in traffic the number of days where an accident occurred and the number of days where more than one accident occurred have increased.
- Accidents tend to be clustered closer to Addis Ababa than Adama.
- The most accidents occurred from around 7am to 11am, 4pm to 6pm and from midnight to 2am. However, the time of day with the most users on the Expressway followed a different distribution. Traffic tended to be low during the early and late hours then experienced high volumes from 6am to 6pm.
- Despite the distributions of traffic and accidents according to time of day appearing somewhat dissimilar, the number of accidents appeared related to the number of cars on the Expressway.

Daily Traffic and Accidents

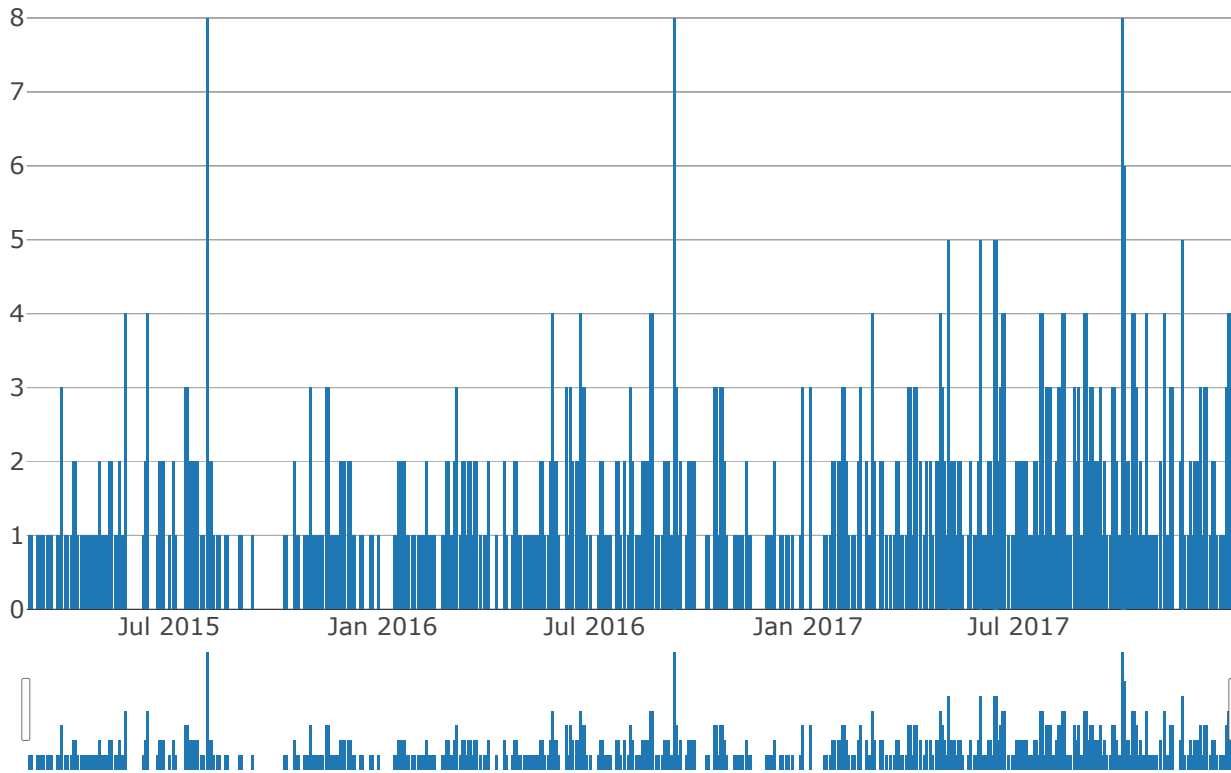
This section shows the daily number of cars on the Addis Ababa Expressway (AAE) and the daily number of accidents. Since 2015, the amount of daily traffic has risen from about 10,000 cars to over 20,000 cars today. With this rise in traffic accidents have become more frequent. Both the frequency of days with a traffic accident and the frequency of days with more than one traffic accident have increased over time.

Traffic



Accidents

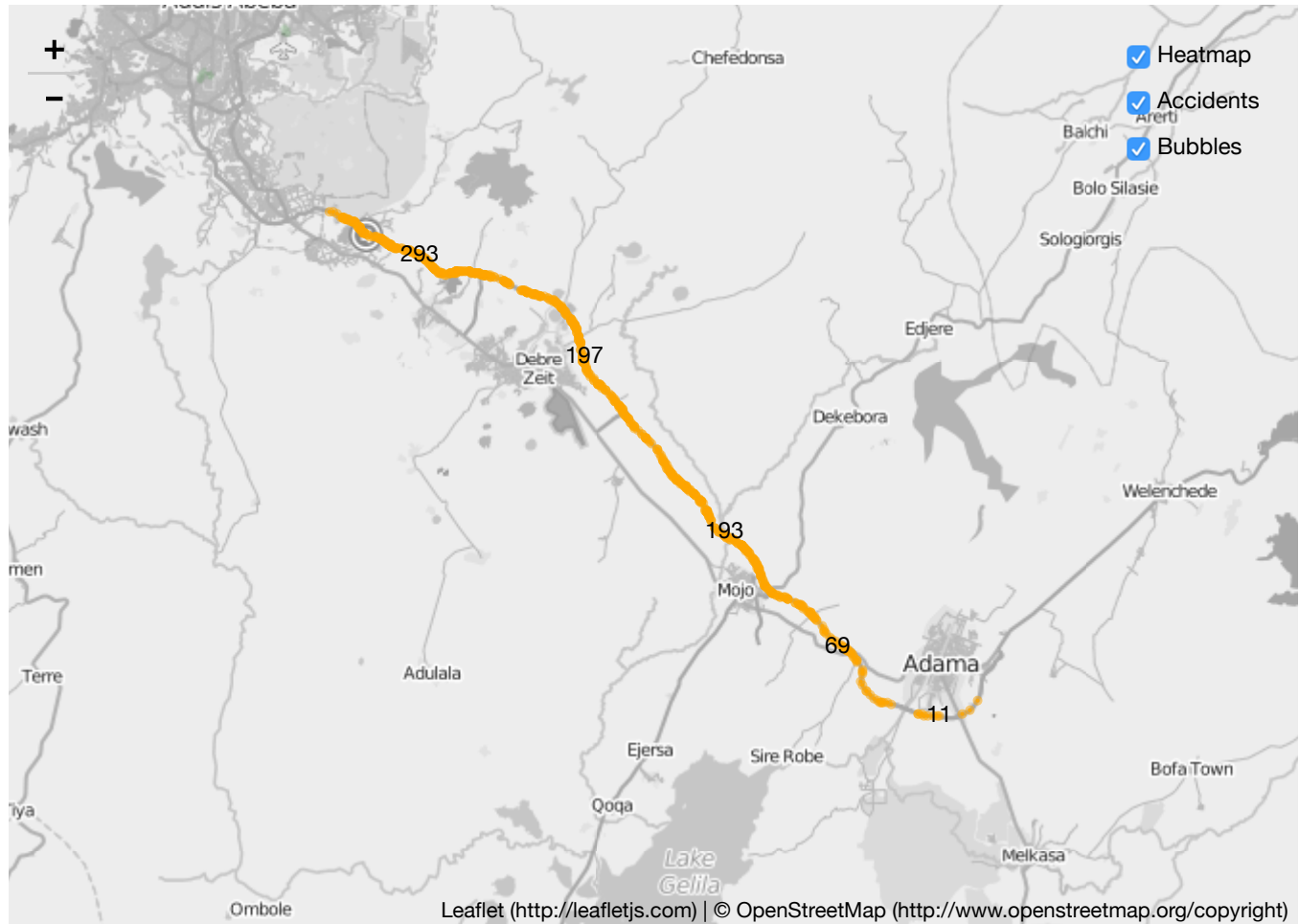
1 yr 2 yr 3 yr all



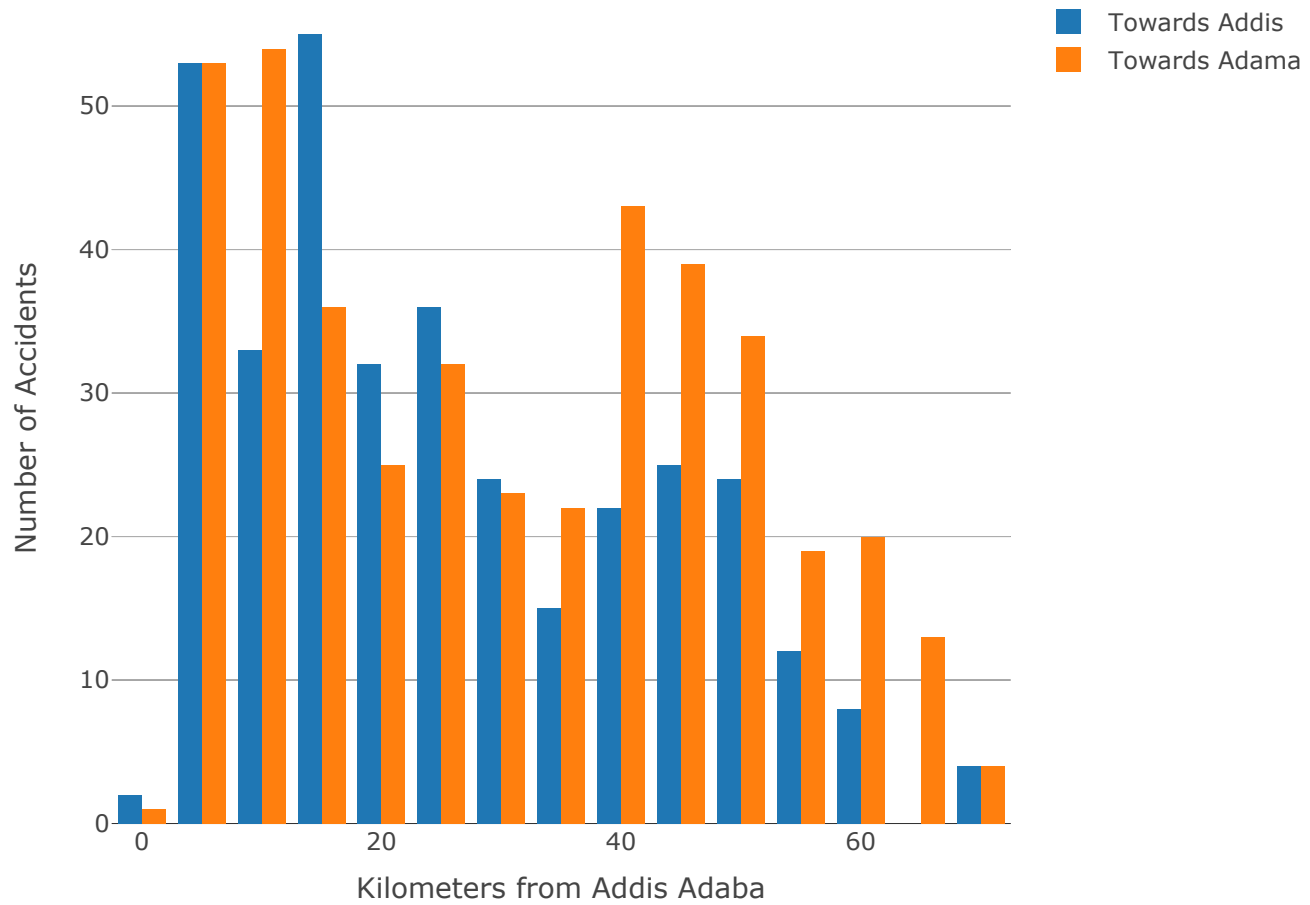
Accident Locations

This section illustrates where accidents have occurred. Most accidents tend to occur within 30km of Addis Ababa, particularly for traffic heading in the direction of Addis. The area along kms 40-55 also experienced a larger portion of accidents, particularly for traffic heading in the direction of Adama. More accidents have occurred in the direction towards Adama; however, the values are relatively close. From 2015 to 2017, 336 accidents occurred in the direction towards Addis Ababa while 392 accidents occurred in the direction towards Adama.

Map of Accidents



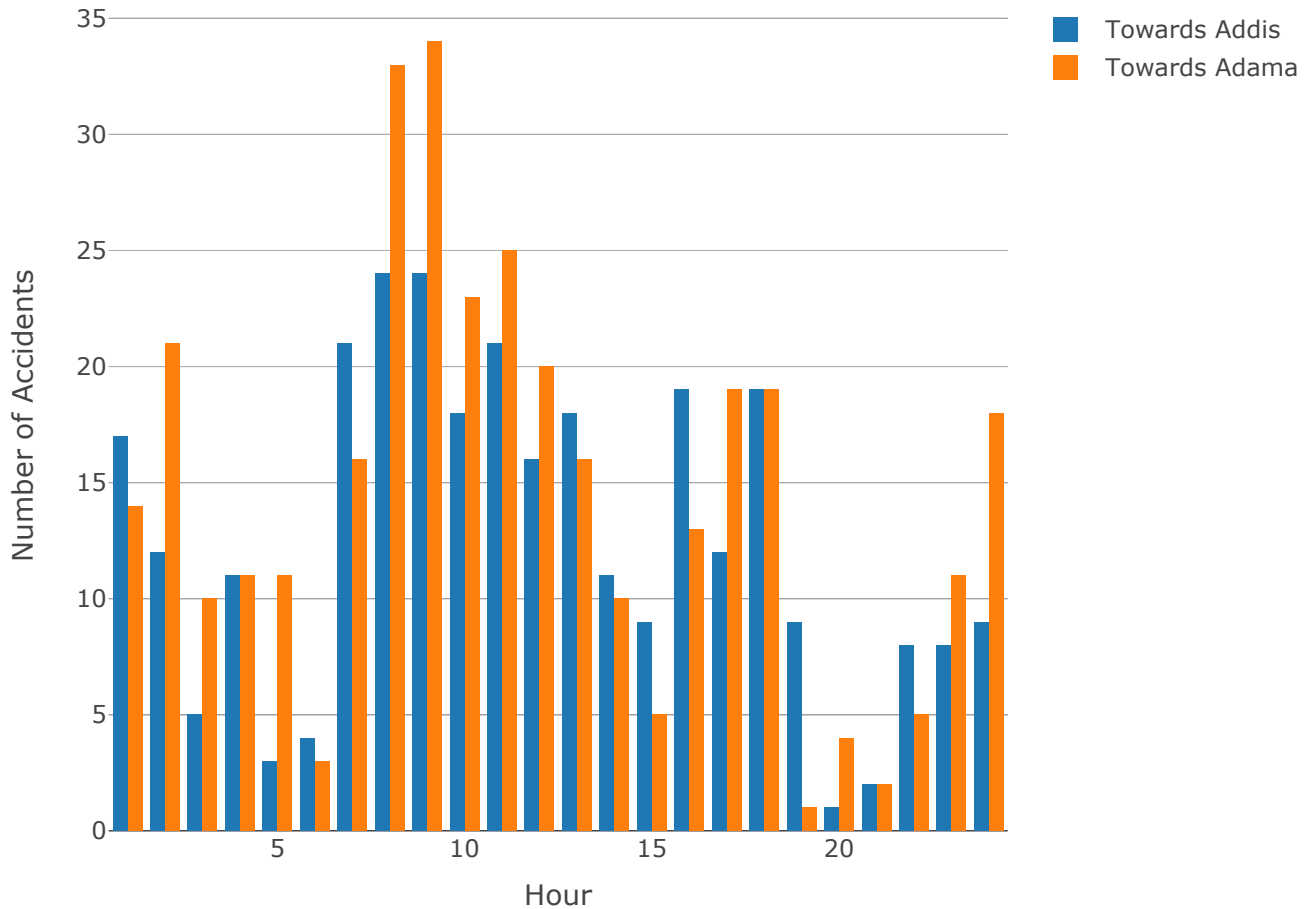
Accidents Along Road: Totals in Each Direction



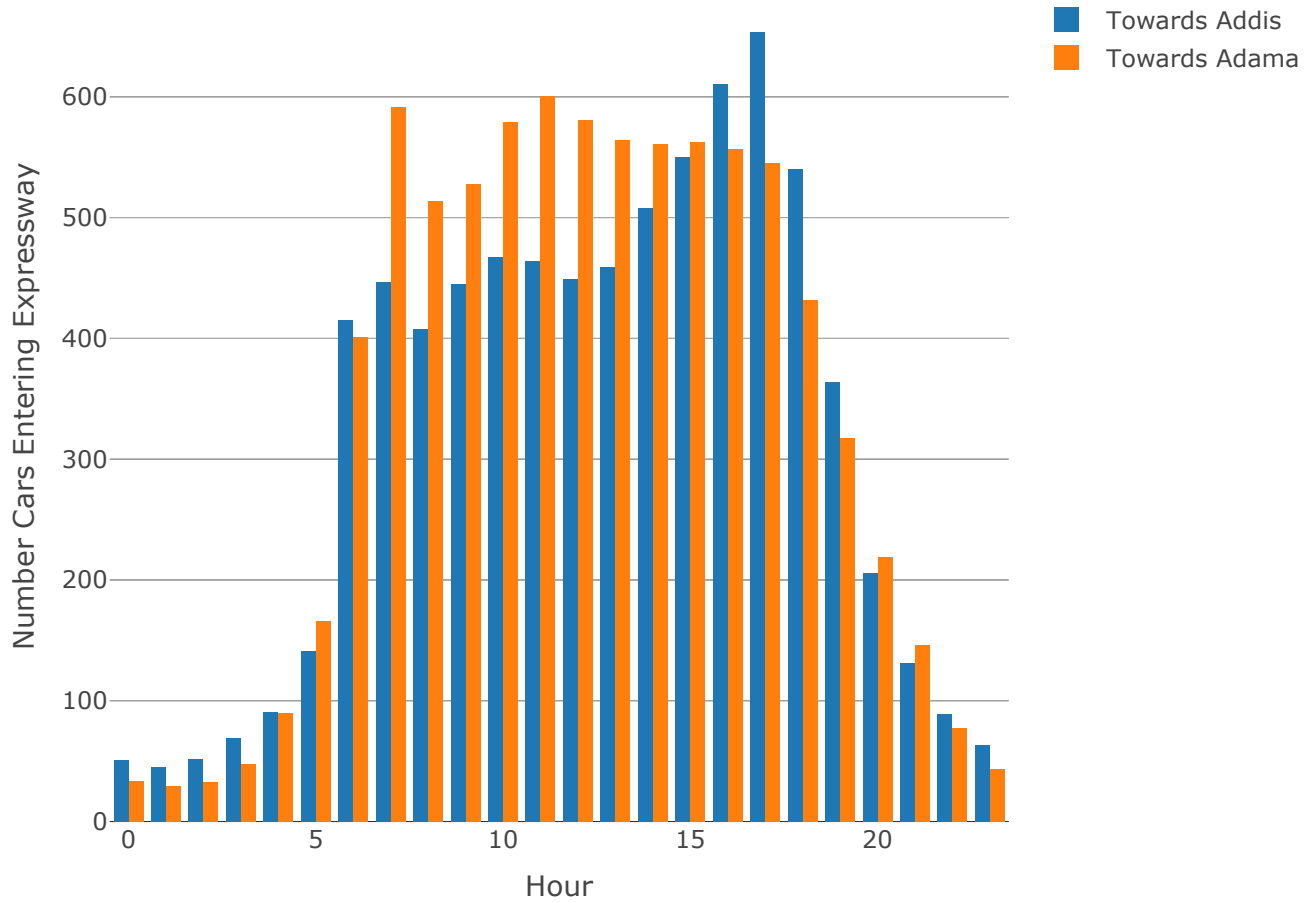
Traffic and Accidents by Time of Day

This section shows when accidents occur and when the Addis Ababa Expressway (AAE) has the most traffic. In both directions, the AAE has experiences peakes in accidents around 7am to 11am, from 4pm to 6pm and from midnight to 2am. The average number of cars entering the Addis Adaba expressway is low during the early and late hours, and experiences a high volume of traffic from about 6am to 6pm.

Total Number of Accidents by Time of Day



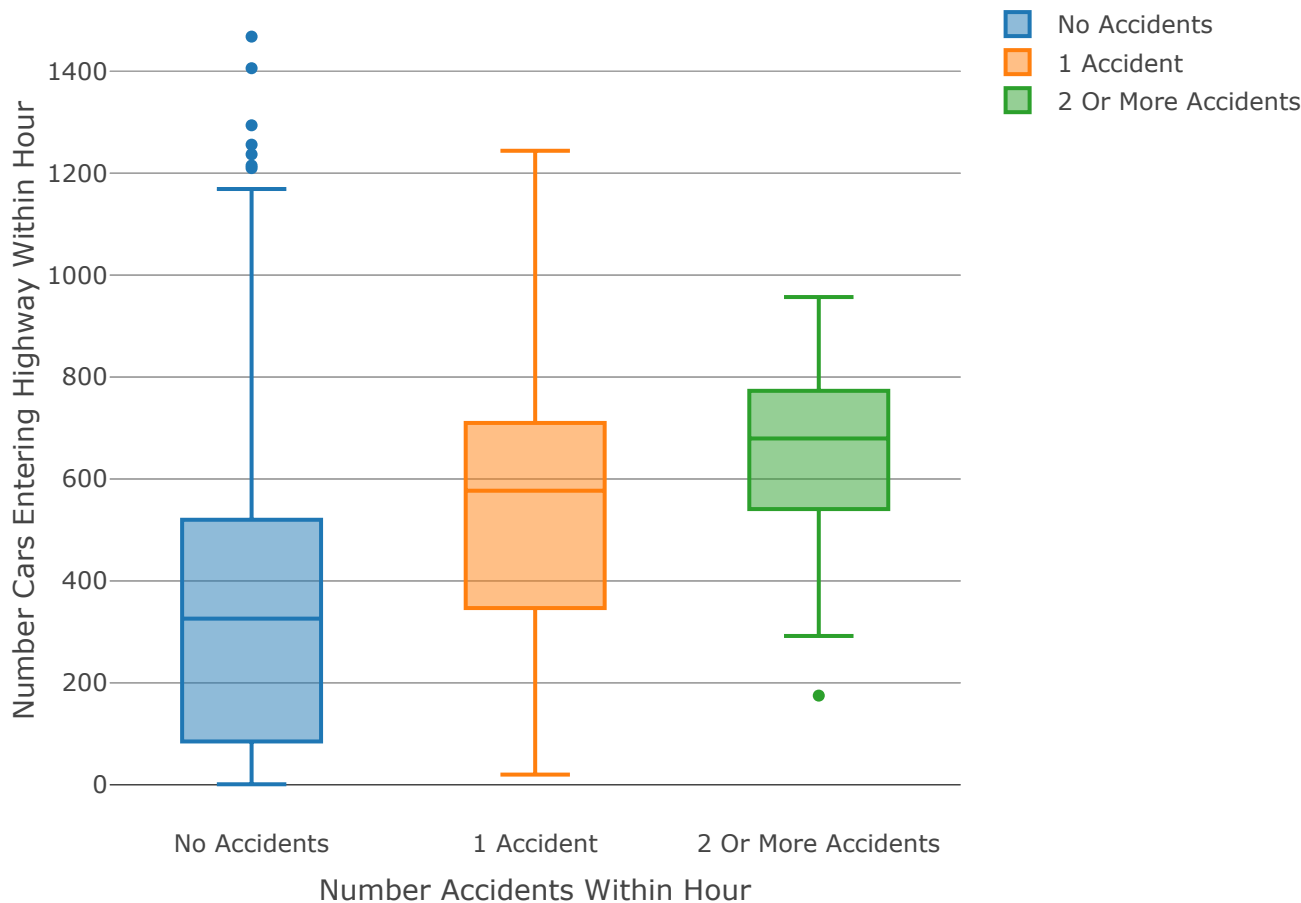
Average Number of Cars Entering AAE by Time of Day



Accidents and Other Variables

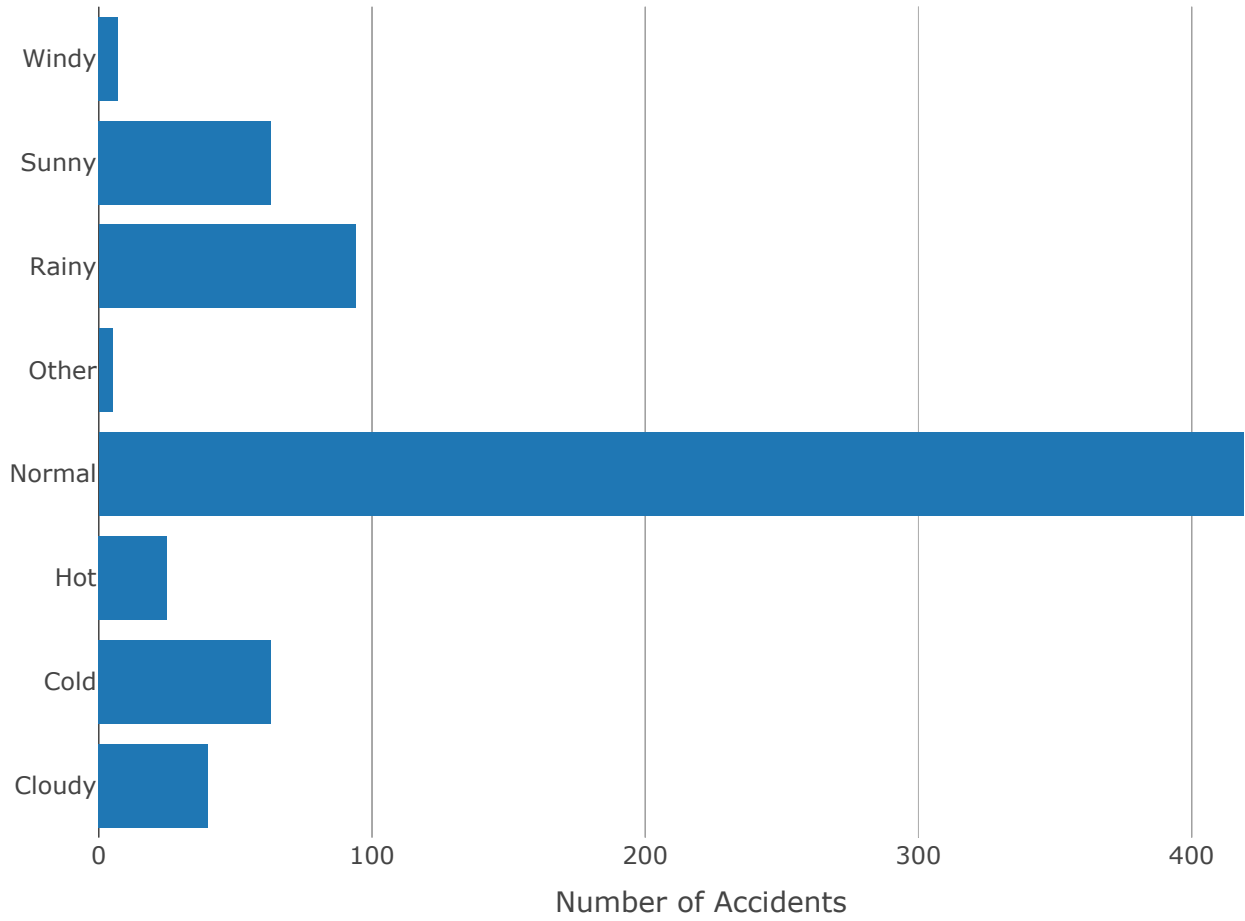
This section relates accidents to other variables. The number of accidents appears related to the amount of traffic on the Addis Ababa Expressway (AAE). Hours where an accident occurred tended to have more traffic than hours where no accident occurred. The majority of accidents occurred when the weather was deemed “normal”; however, among other weather types accidents most frequently occurred on rainy days. There doesn’t appear to be a strong relation between the number of accidents and traffic by day.

Accidents Per Hour and Number of Cars Entering AAE Per Hour



The “box” part of the boxplot shows the number of values where 25%, 50% and 75% of the data was at least that value. Each data point shows the number of cars entering the AAE within an hour and the number of accidents that occurred within that occurred. Values are taken for each direction of the AAE; consequently, each hour in a day has (e.g., the time period from 1pm to 2pm on June 8th) has two observations; one that shows number of cars entering the AAE and number of accidents in the direction of Addis and the same for the direction of Adama.

Accidents by Weather Type



Accidents and Traffic by Day of Week

