Trevor Kirsch

**CE 650C: Project Statement**

**Title:**

Using Vehicular Probe Data to Estimate the Travel Demand of the Working Population in Des Moines

**Description:**

The purpose of this project is to estimate the movement of the Des Moines working population between their place of residence and Des Moines, Iowa using vehicular probe data. Des Moines is the capital and the most populous city in Iowa. Because of this, thousands of individuals travel to and from this business and economic center to work twice a day during most weekdays each year. This repetition during both morning peak and afternoon peak periods leads to roadway degradation and capacity constraints due to constant vehicular demand. By estimating the movement of the working population to and from Des Moines, the travel patterns of the motorists can be modeled at a fine detail.

Numerous traffic engineering services can be improved by obtaining the travel patterns of the Des Moines working population. By knowing the desired movements of the population, roadway infrastructure can be improved and reinforced to handle both the estimated vehicular capacity as well as the vehicular weight of the travelling public. In addition, work zone detour recommendations can be suggested in a more dynamic manner. Rather than finding the quickest route to return all vehicles to the previous roadway after the work zone area, specific travel routes can be presented to motorists that have been calculated to reduce delay and represent the quickest route between Des Moines and their city of residence.

**Data:**

I am unsure of the current data format that this available, but an estimated 30 GB of vehicular probe data will need to be processed to complete this project.