Visualizing travel data

Enabling a change towards sustainable transportation behavior

**Problem**

While we’ve implemented the instrumentation to collect travel data, a user’s motivation to confirm trips drops after three weeks. The lack of real-time visualization of the data is an important contributor to a lack of user participation and change towards sustainable transportation behavior.

**Motivation**

My goal is to create visualizations that allow users to extract insight from their own travel data. I hypothesize that the ability to view time series data and receive actionable suggestions would encourage users to continue contributing data and increase awareness of more sustainable modes of transportation.

**Approach**

After researching existing work in the area and given existing visualizations, I chose to focus on visualizing times series data and presenting suggestions for more sustainable routes for a mobile user.

**Results**

I explored three different visualizations of an individual’s carbon footprint over time and presented them to users. Initial feedback indicated a desire for a weekly goal so I included a target in the final visualization. Based on user feedback when experimenting with axis labels, I realized including familiar measurements would help the user understand the impact of their behavior. I also implemented a data-driven suggestion interface that aggregates a user’s most common motorized trips and presents one suggestion to improve their carbon footprint.

**Future Work**

I would like to optimize visualizations further for the mobile phone and instrument real time recommendations as these are the two unique capabilities of E-Mission. Based on results of the Quantified Traveler Project, I believe including a social component where users can compare their footprints with other groups would increase a user’s stake in the effort for improving their own carbon footprint. Inspired by UbiGreen, I would also like to include a general indicator of a user’s carbon footprint over time.