All code, plots reside here:

<https://github.com/karunmj/usu-coursework/tree/master/cs5660datasc/hw/hw3>

**Transit frequency analysis for Logan, UT**

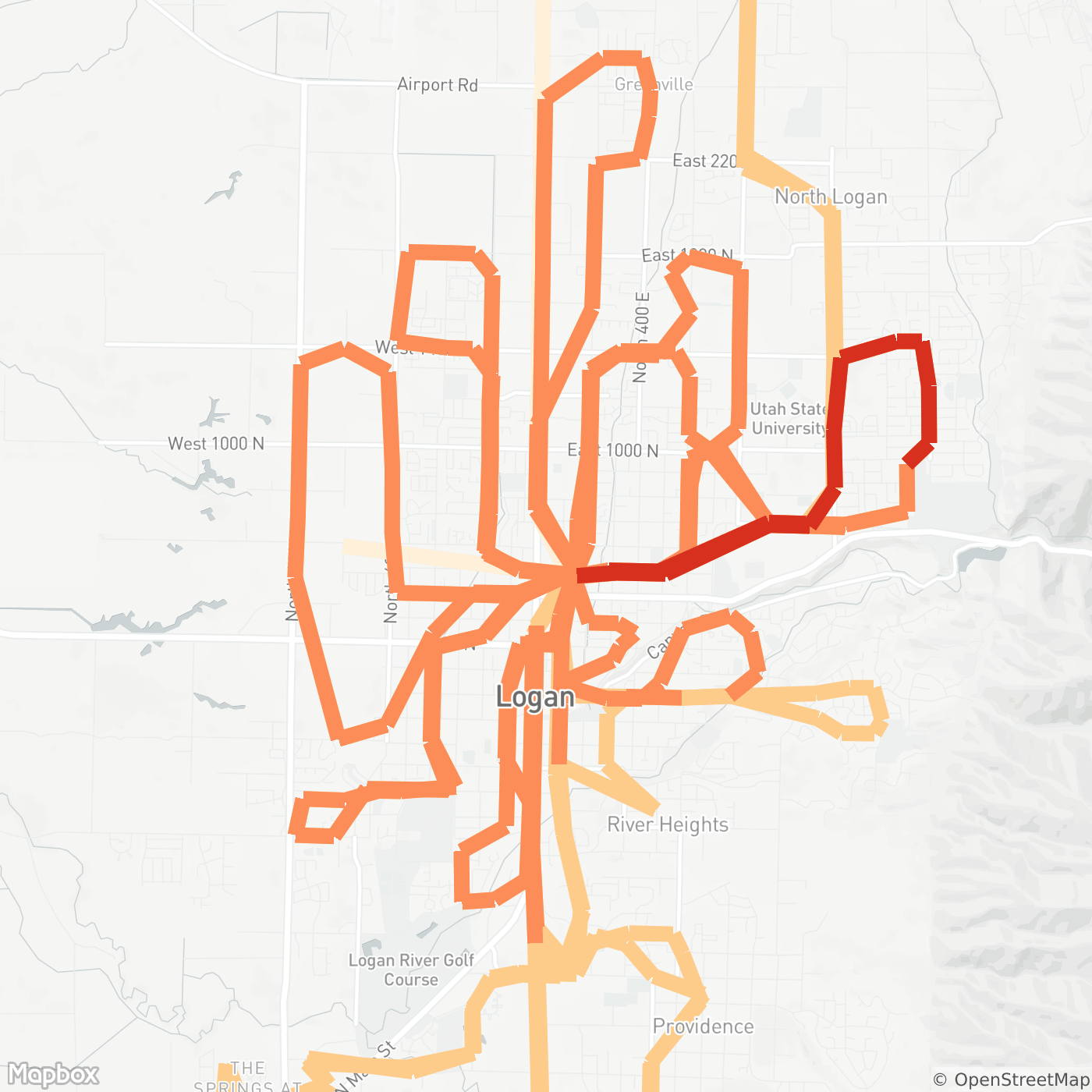


Fig. 1: Frequency service map for Logan, UT between 07:00 to 09:00 am on a regular weekday ([link](https://api.mapbox.com/styles/v1/karunjoseph/ciun3m2px007x2irrn4puqdf6.html?title=true&access_token=pk.eyJ1Ijoia2FydW5qb3NlcGgiLCJhIjoiY2l1M2JqbnNmMGlsZTJvcXRkZngxNTd6ZSJ9.bzal6gpXP6tOqrRG4BYNMw#11.86/41.7400/-471.8308))

**Motivation:**

Public transportation is more attractive to commuters when frequent service exist between a trip’s origin and destination. Transit frequency refers to the number of trips between two transit stops for a particular period in time. Higher transit frequency would provide a level of flexibility and ease to commuters as they do not necessarily have to time their trips and are mostly guaranteed shorter transfer times between trips. Such information is usually not conveyed in an official transit map. Fig. 1 shows a frequency service map for Logan, Utah, served by Cache Valley Transit District (CVTD) for the time period between 7:00 to 9:00 am on a regular weekday. Stronger color and line width represents more frequent service between two stops.

**Methods:**

Frequency was calculated by dividing the number of trips between every two distinct stops for the given time duration of two hours. An early morning time duration was chosen, as a primary reason for commute was getting to work in the morning. An edge was formed between distinct stops and was assigned a frequency class, with a higher class and darker color for more trips per duration. (one more line)

The coloring scheme was obtained from Color brewer (“ColorBrewer: Color Advice for Maps” 2016), a web tool for selecting colors for maps. This works had been inspired and heavily borrowed from a Mapzen blog post (“Transit Dimensions · Mapzen” 2016), Transitland Datastore (“Datastore ⋅ Transitland” 2016) and work of Ian Reese (“README.md” 2016)

**Conclusions:**

Fig. 1 shows it is easier to get to Utah State University (USU) and the surrounding region as transit stops have more service between them. This is primarily due to Route 1 that runs every 15 minutes between 7 to 9am. However, CVTD services would not be convenient for commuters who would like to get to other places around Logan. (line on assignment req)

**References:**

“ColorBrewer: Color Advice for Maps.” 2016. Accessed October 23. http://colorbrewer2.org/#.

“Datastore ⋅ Transitland.” 2016. Accessed October 23. https://transit.land/documentation/datastore/.

“README.md.” 2016. *Gist*. Accessed October 23. https://gist.github.com/irees/272e5dc57614cab595a0.

“Transit Dimensions · Mapzen.” 2016. Accessed October 23. https://mapzen.com/blog/the-transit-dimension-transit-land-schedule-api/.