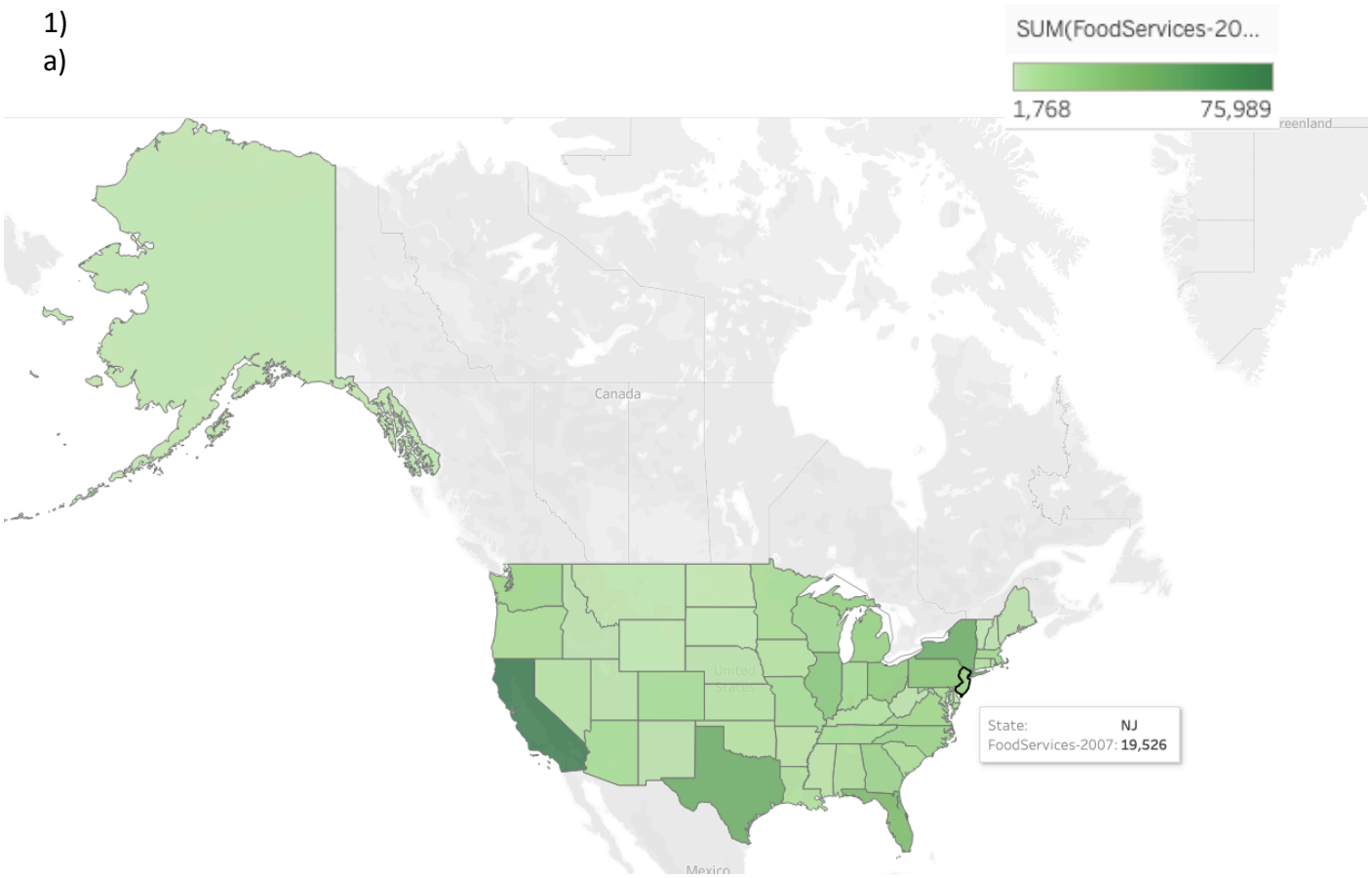
Kunal Roy
HW 2
CSC 465

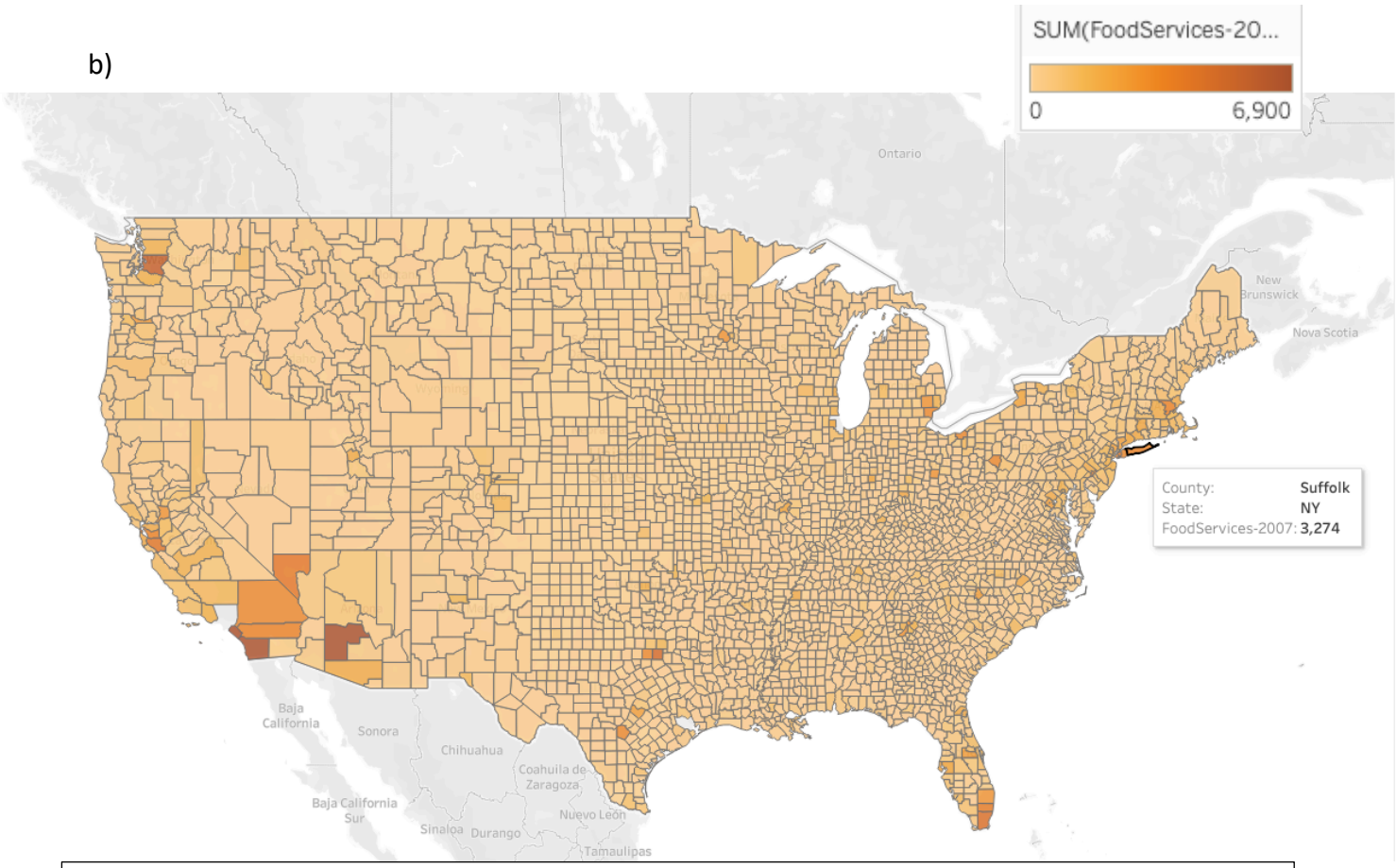
1)
a)



Food services by state: I plotted this graph by plotting state against the sum of food services as the food services were given by county and so they needed to be summed to get the entire states number and used a map to graph it.

Patterns you can see are that the food services in states like California, Texas, Florida and New York are high. These are all of the big/more well-known states and they seem to have more food services available than most other states. Also a large part of the country, especially the Midwest and beyond have food services that fall in the low range of the spectrum. I have gone with the single hue of green and just distinguished the number of food services by saturation of the green, using just one color avoids and confusion and the focus is on the saturation that tells the number of food services.

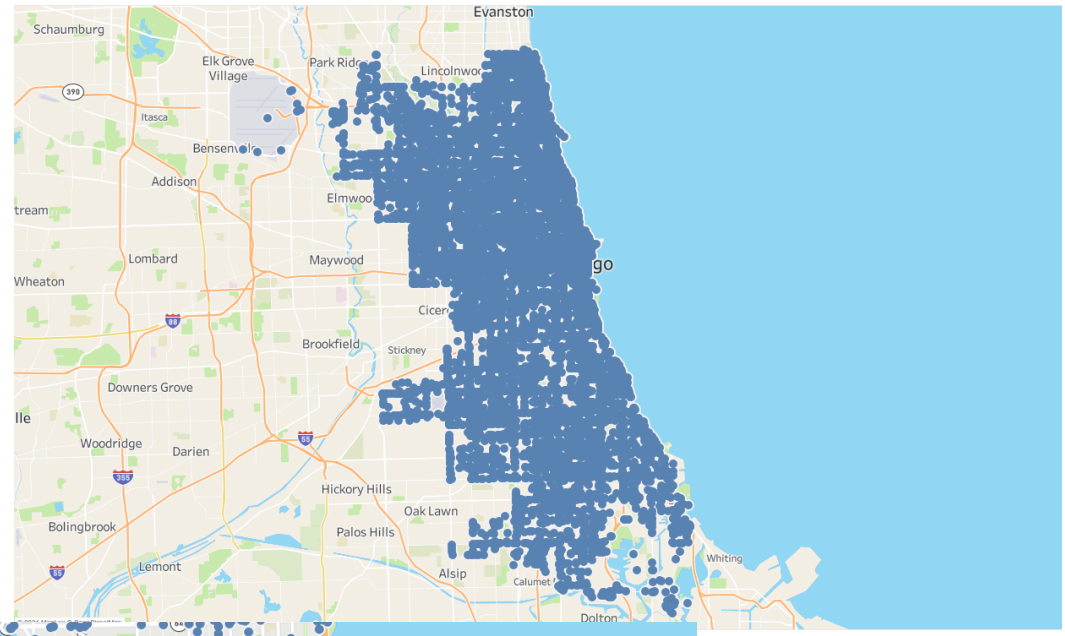
b)

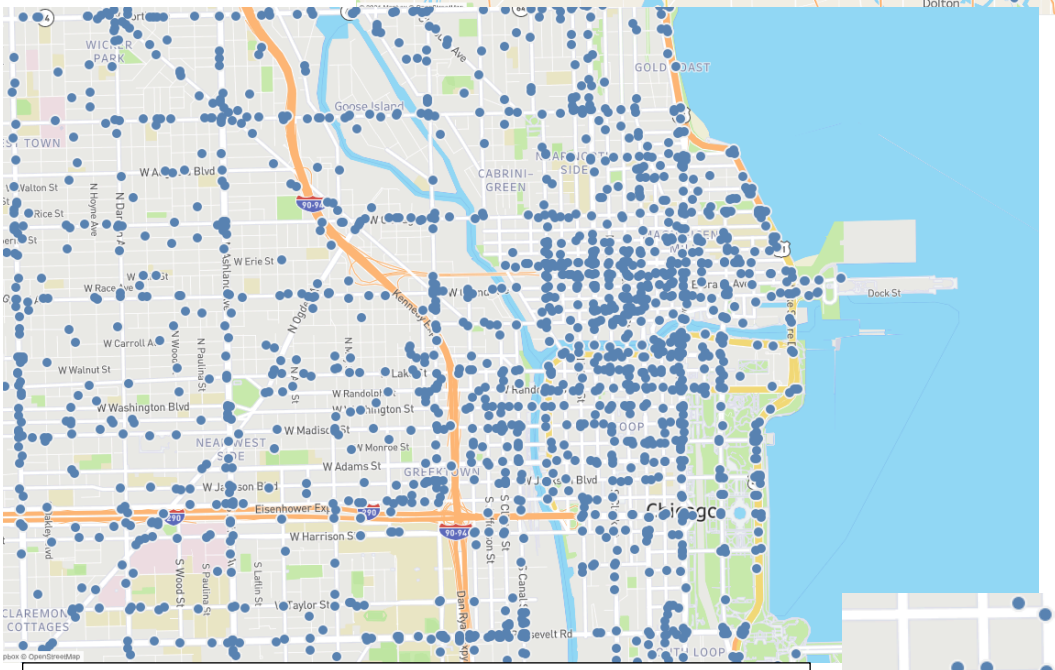


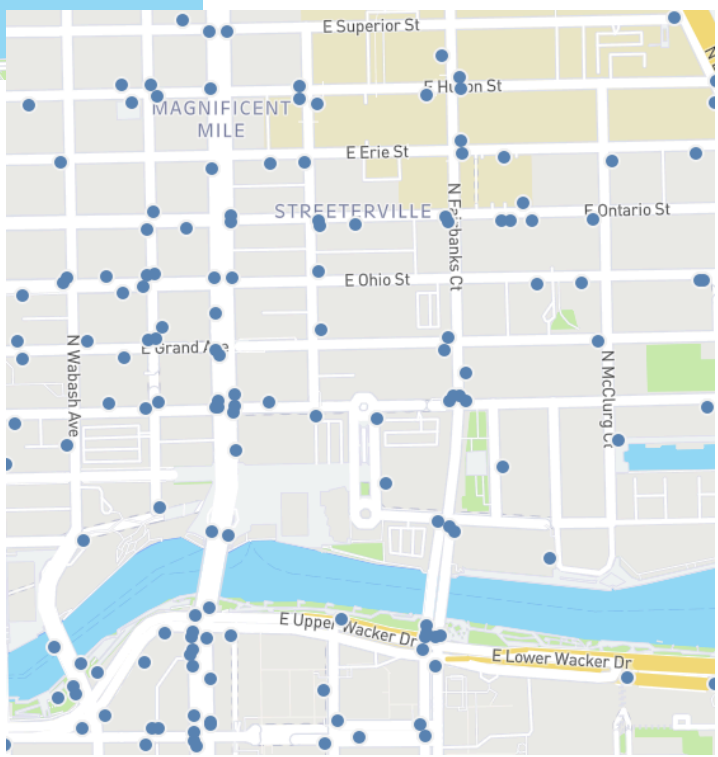
Food services by county: I plotted this graph by plotting county against the sum of food services using the map graph.

Patterns you can see are that the food services are high in counties that are in states like California or Florida, the more well-known and bigger states also have specific counties that have a large number of food services. But there are counties in other states like Washington(that are not that high overall) that also have counties with a high number of food services. I have gone with the similar approach of using just one color, orange and then encoding the number of food services with the saturation to keep it simple and not confuse my audience.

2)
a)





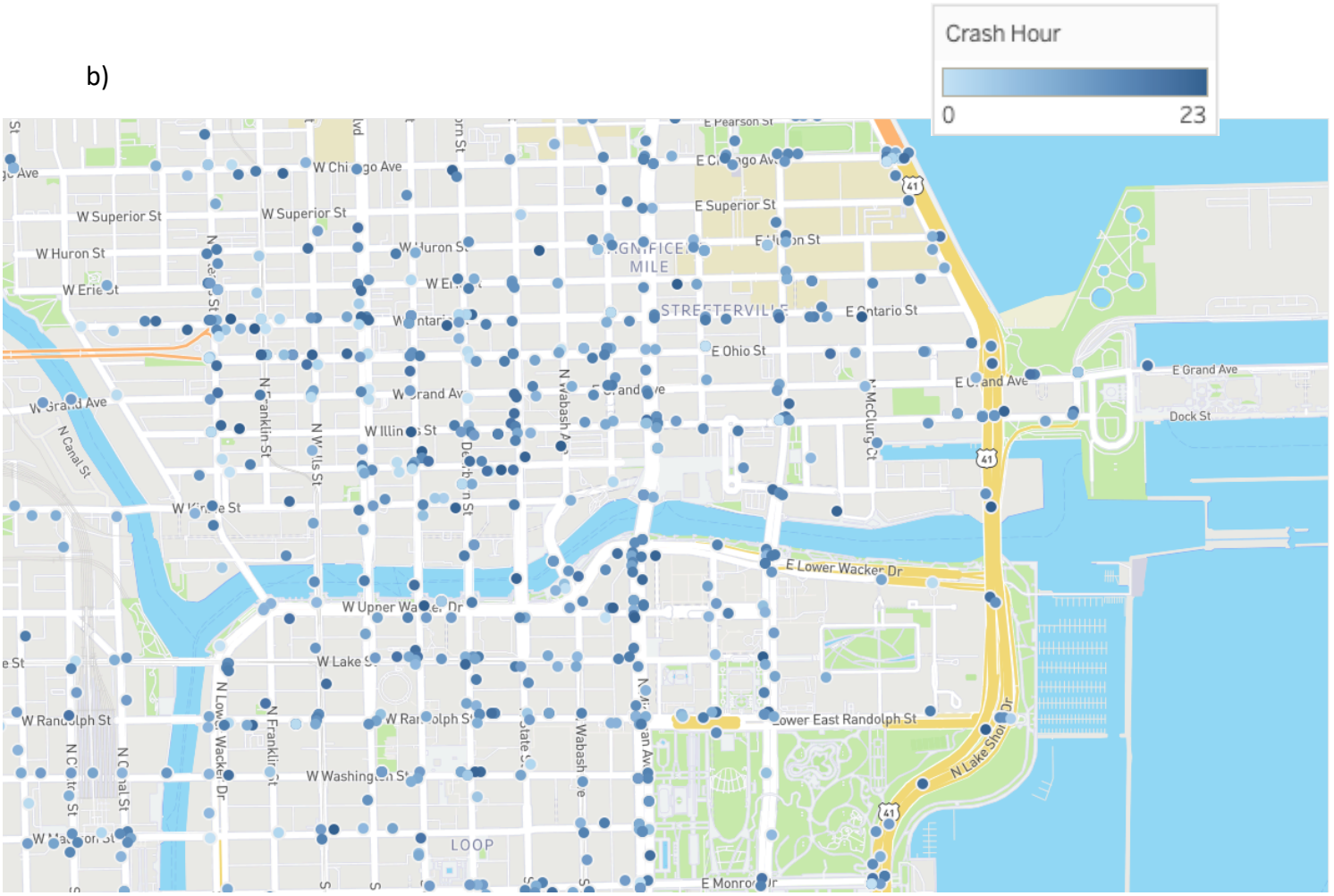


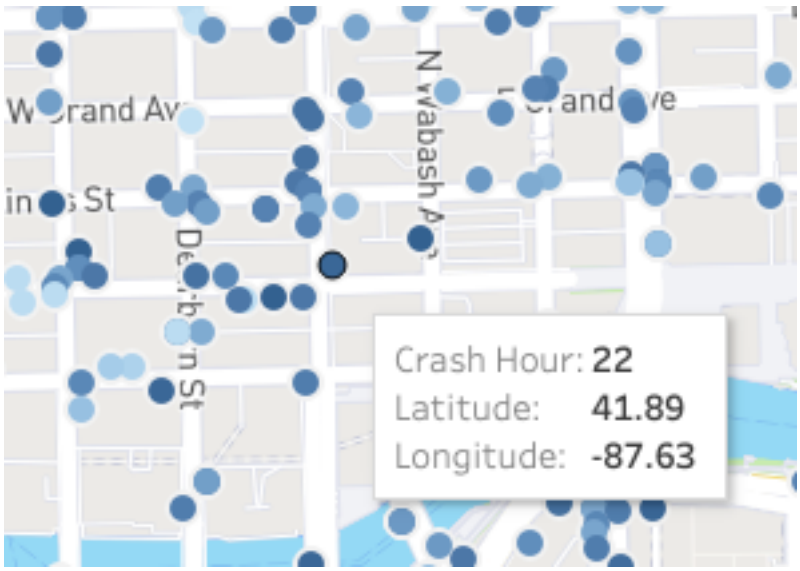
I plotted these points by plotting latitude against longitude of all of the accidents, I then changed the map layer underneath to street view so one could see where all the accidents took place in relation to their every day map.

Here, I have given you 3 views of the map created, one from a far containing all the data points, and one at a more granular level on the right so one can see where exactly on a particular street did the accidents take place, i.e. on mag mile!

Once can see in the above map, that the accidents are more dense in the downtown area and are less in the areas leading up to downtown and in the suburbs. So if you wanted to avoid car accidents, you would not drive in dowtown and take the subwav instead!

b)





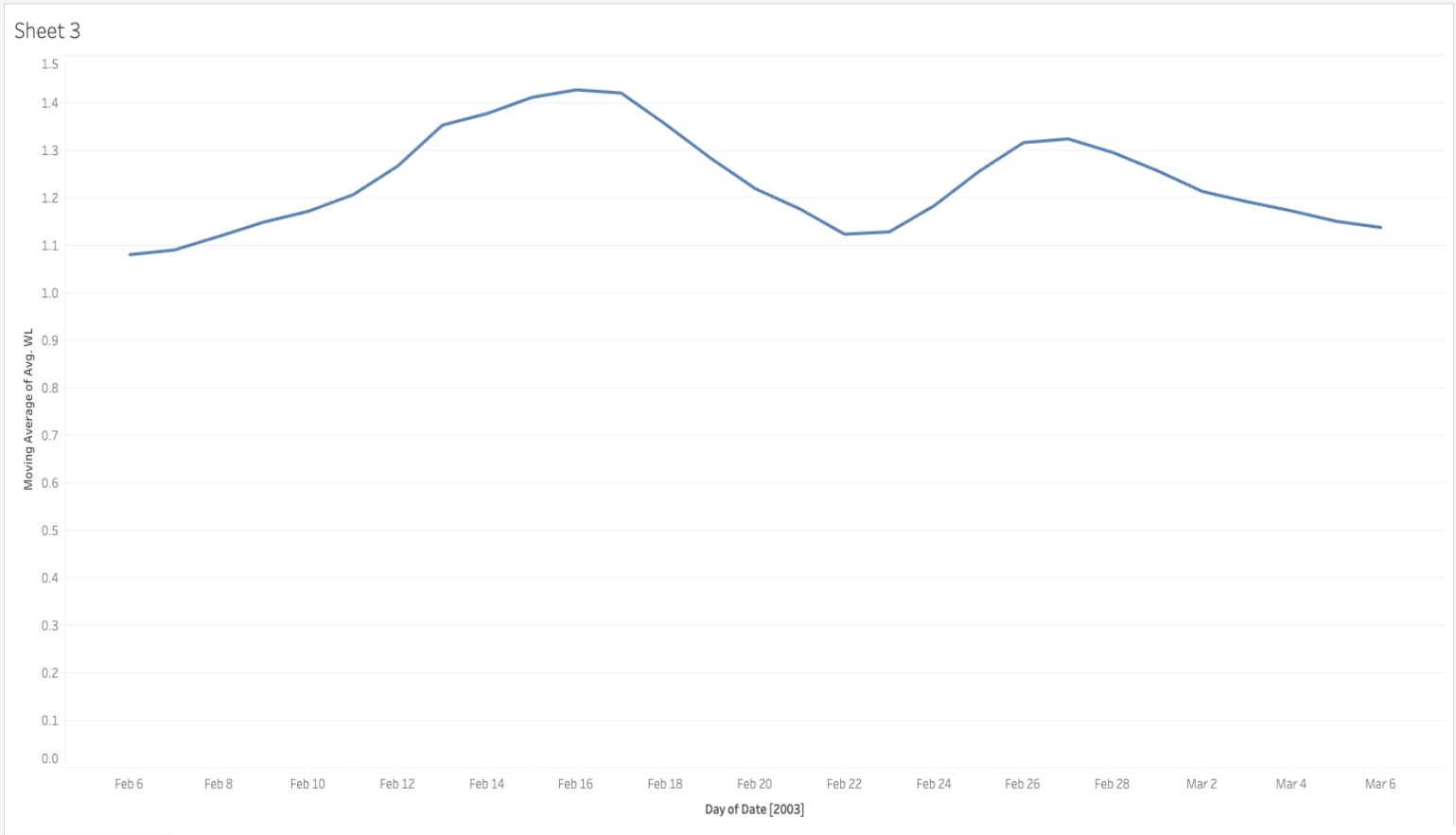
I plotted these points the same way I described before, but here I just brought in the extra attribute of crash hour, so one could see the position of these accidents in relation to the time they occurred.

The approach I took to this is that I plotted where these accidents took place on a regular map and then I just colored the plotted points encoding the time of the day the crash took place.

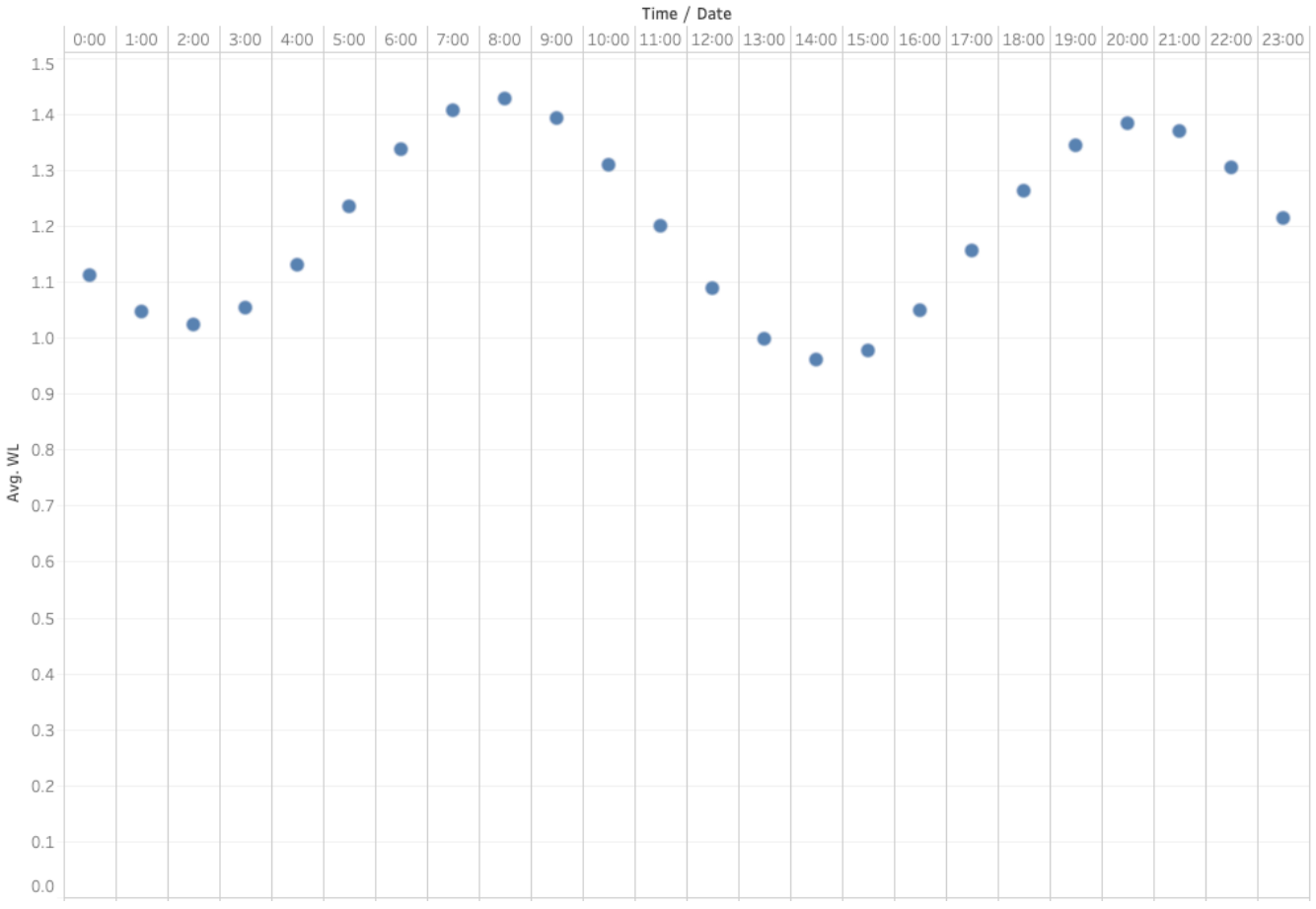
If you look at the screenshot on the left, you can see that in the 2 blocks between Dearborn street and Wabash street, there seems to be a lot of accidents in the evening to night time from 6PM to 11PM. The one that I have hovered over is in that vicinity and the crash took place at 10 PM (displayed in military time). So if one used my map visualization, they could zoom into a particular area and see what time of the day do most accidents occur there so that they could avoid that area in that time period.

3)

a)


Sheet 3
Moving Average of Avg. WL
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Feb 6
Feb 8
Feb 10
Feb 12
Feb 14
Feb 16
Feb 18
Feb 20
Feb 22
Feb 24
Feb 26
Feb 28
Mar 2
Mar 4
Mar 6
Day of Date [2003]

b)


Time / Date
0:00
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23:00
Avg. WL
1.5
1.4
1.3
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1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0

c) In the first graph, I plotted the day of the date against the moving average of the average of the water levels that occurred every day. I used the average measure, as it would not be useful to say look at the sum of all of the water levels, knowing the average water level on a particular day is more useful. I also used a range of 30 days to show this average level each day.

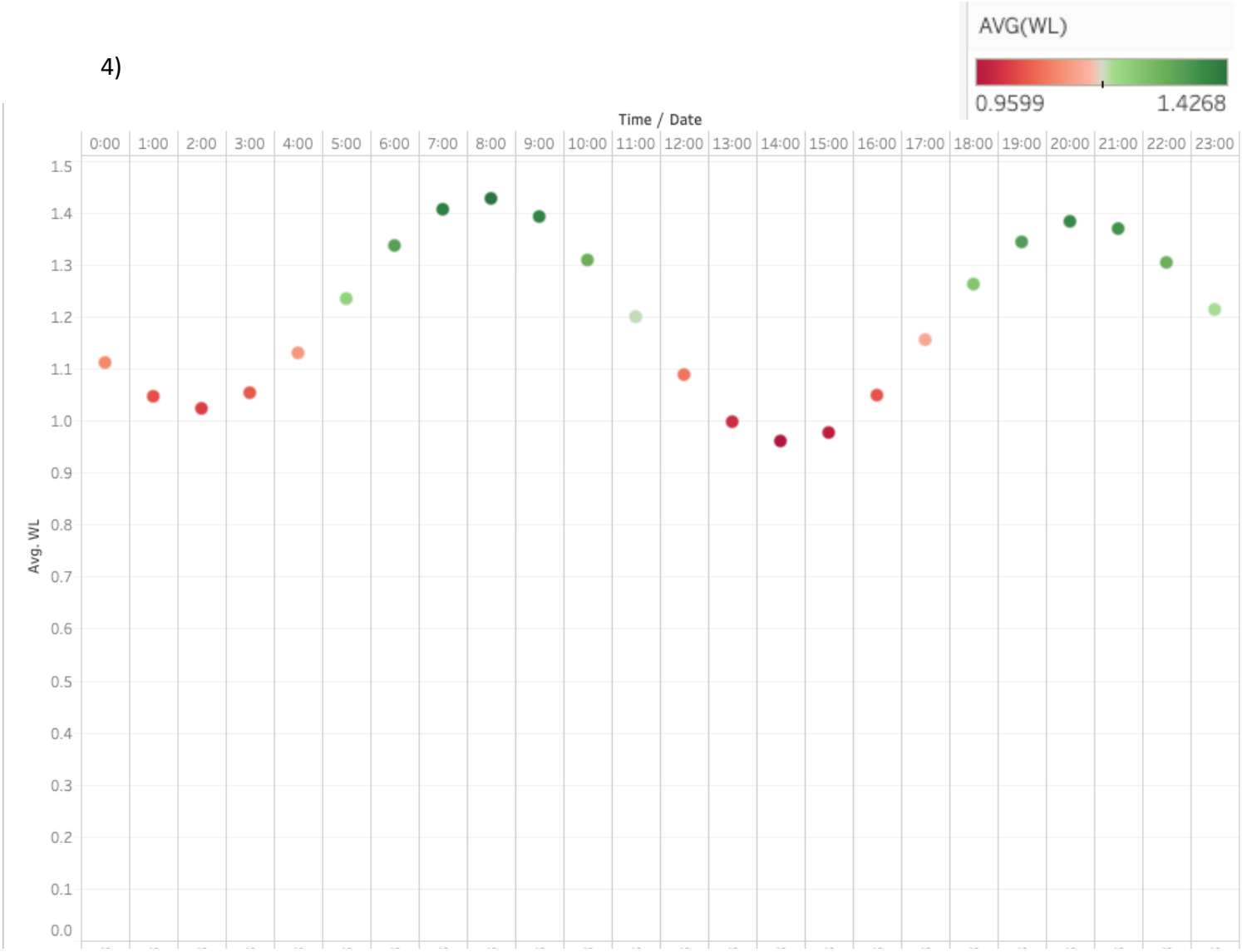
For the second graph, I plotted time and date against the average water level.

The difference between to the graphs is this: In the first one, I am trying to show the average water level witnessed each day(as water level changes every hour per day) for a period of 30 days, for which I showed the moving average version so that it could be smoothed out and the trend be much more clear to the audience of how the water level is changing from day to day over a 30 day period.

In the second graph, I am trying to show you the trend of average water levels during an average day. These water level values for each hour of the day is averaged over all the 365 days, so that one can see the trend/the cycles that happen on an average day and how that trend or cycle changes from hour to hour in a day. This graph is showing the trend of average water level on an average day and how it progresses with the hours in a day. Once can see that at 8 AM and 8 PM the water levels are high, probably indicating the used water levels to shower and get ready for work and shower and use water after and during dinner.

** Q4 on the next page**

4)



I made this plot the same way as question 3)b), except I added a divergent color scale for the average water level.

I chose 2 hues, red and green. Red to indicate a low water level and green to indicate a high water level. I then used saturation of those 2 colors to show how high/low the water level is above/below the midpoint. One can very clearly see that at what times of the day can they expect a high or low water level just by recognizing the colors red and green knowing from the past that they usually mean red = not good and green = good.