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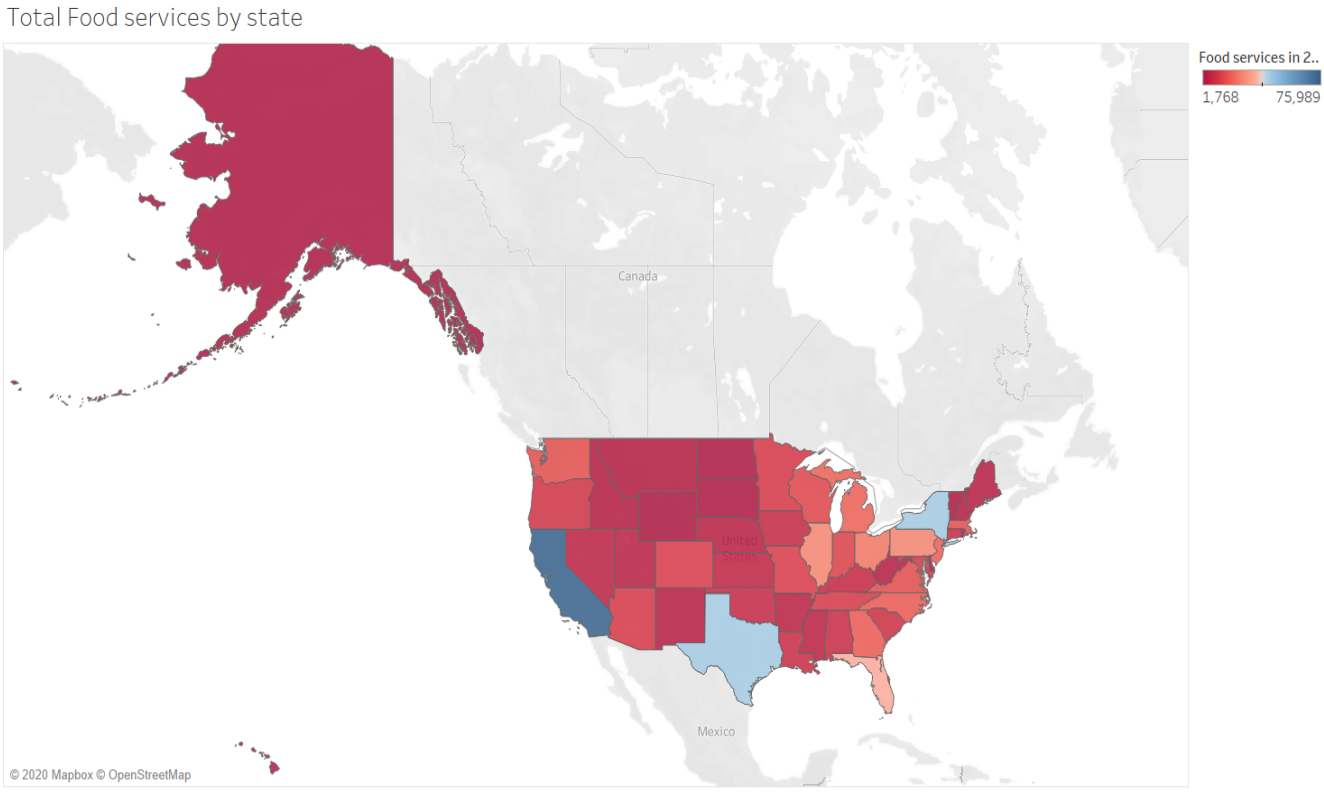
DSC 465 Data Visualization

Assignment 2

Problem 1

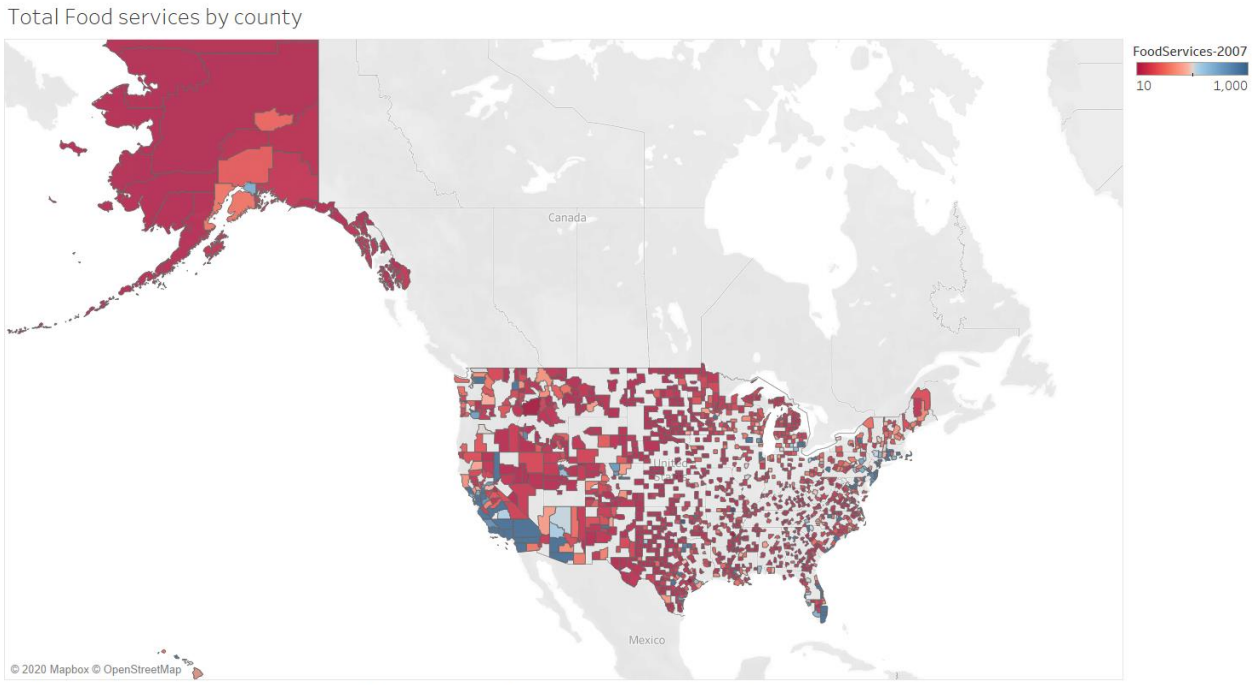
a.



Map based on Longitude (generated) and Latitude (generated). Color shows sum of FoodServices-2007. Details are shown for State. The view is filtered on Latitude (generated) and Longitude (generated). The Latitude (generated) filter keeps non-Null values only. The Longitude (generated) filter keeps non-Null values only.

For this example, I used Tableau, as it describes well geographical dataset (with lang and lat). Diverging color schemes of red and blue highlight high and low food services. We can interpret that states with larger cities or higher population (California, New York, Texas) have greater number of food services.

b.



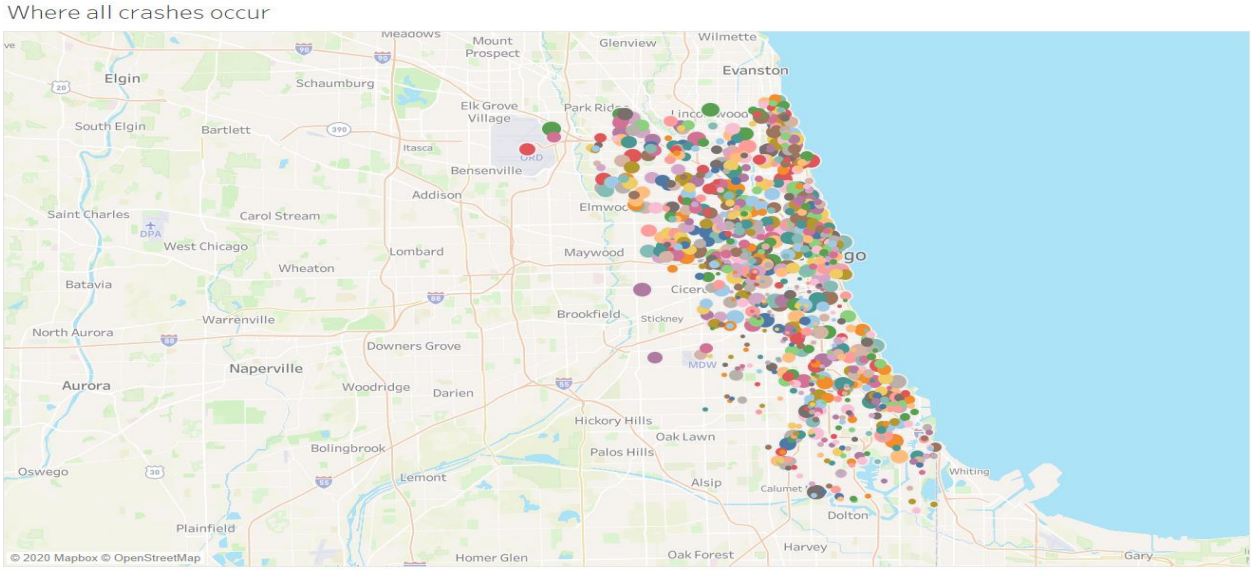
Map based on Longitude (generated) and Latitude (generated). Color shows sum of FoodServices-2007. Details are shown for County. The view is filtered on Latitude (generated) and Longitude (generated). The Latitude (generated) filter keeps non-Null values only. The Longitude (generated) filter keeps non-Null values only.

We can edit color schema for choropleth map based on county level, since we do not want extreme values covered map, and most food services are in Californian counties.

c.

Problem 2.

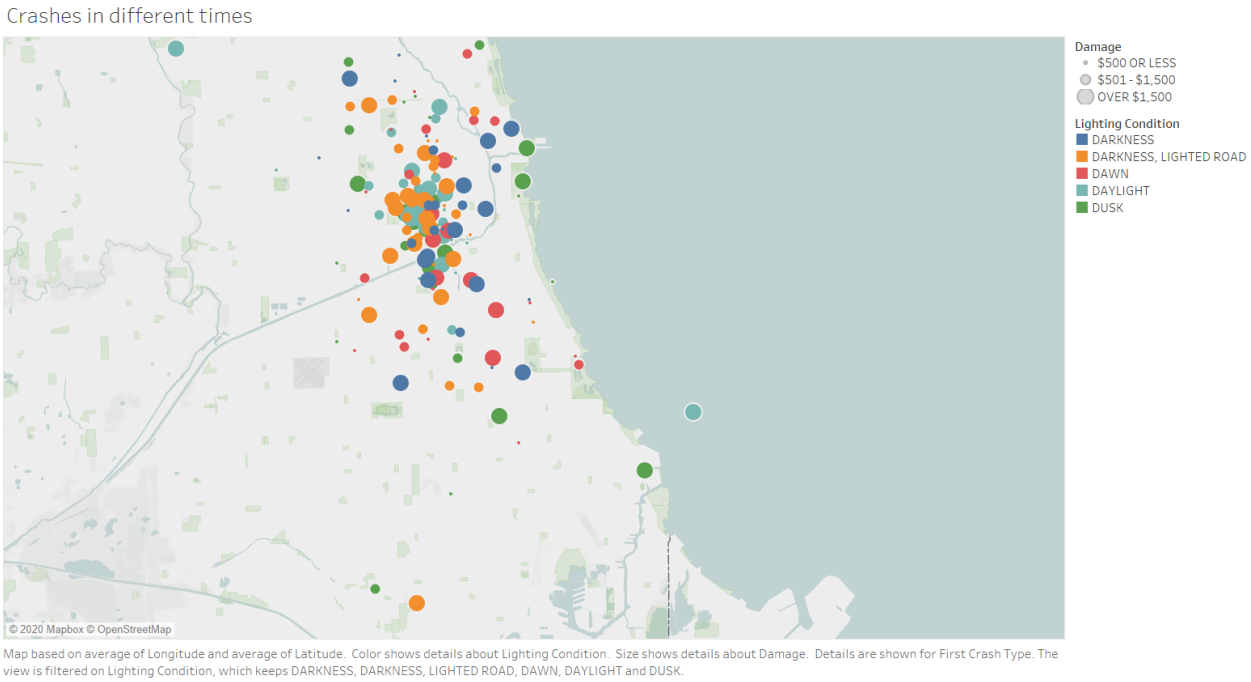
a)



Map based on average of Longitude and average of Latitude. Color shows details about Street Name. Size shows details about Street Name. The view is filtered on average of Longitude, which keeps non-Null values only.

From graph above we can see that the most crashes occurred in North side of Chicago.

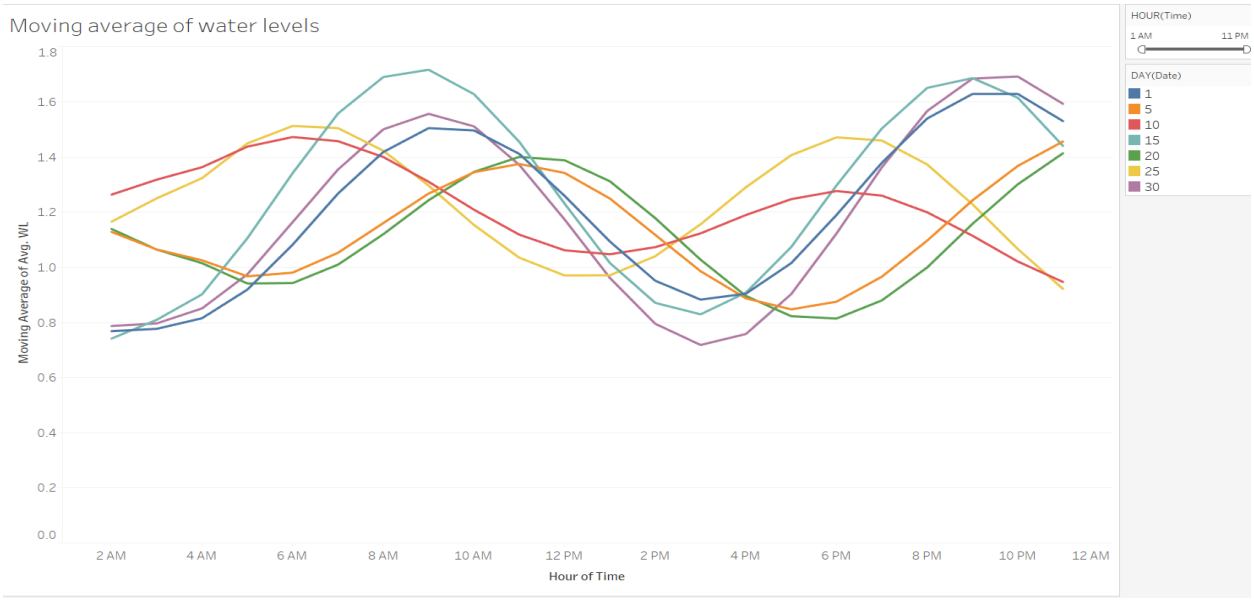
b)



After filtering (removing unknown lightning condition), I applied damage level and crash types to a different time of day, and most of the crashes occurred in darkness or darkness lighted road have damage over $1.500, and it might be reasonable due to the darkness level of roads, and crashes most likely to occur in central Chicago.

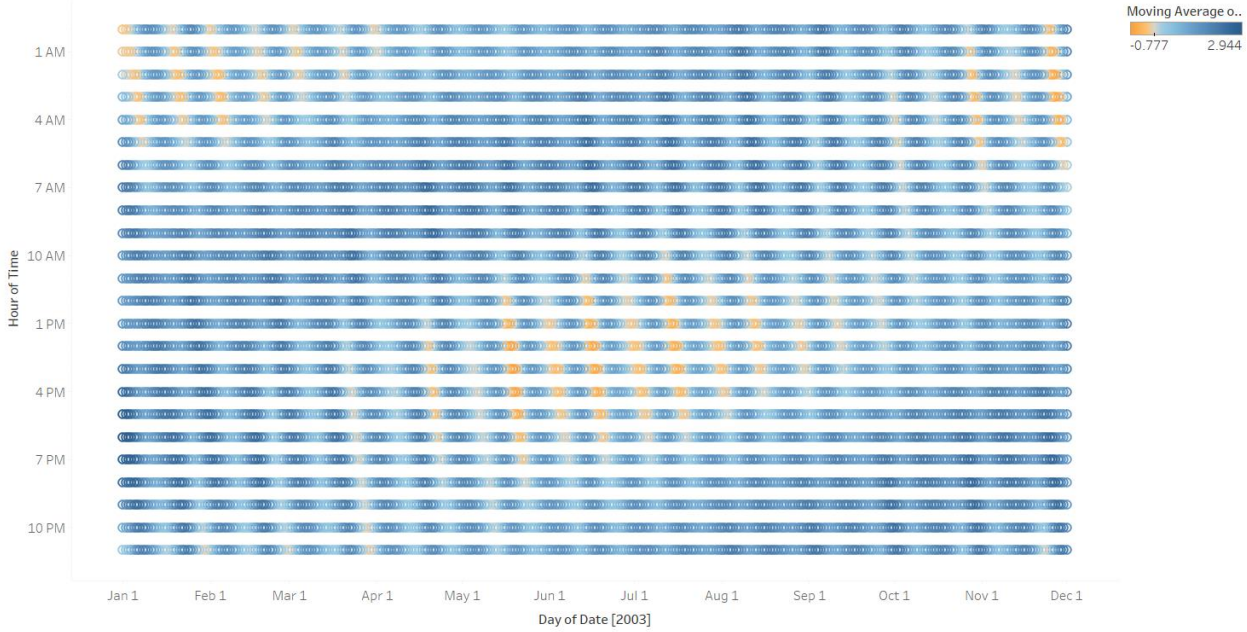
Problem 3.

a.



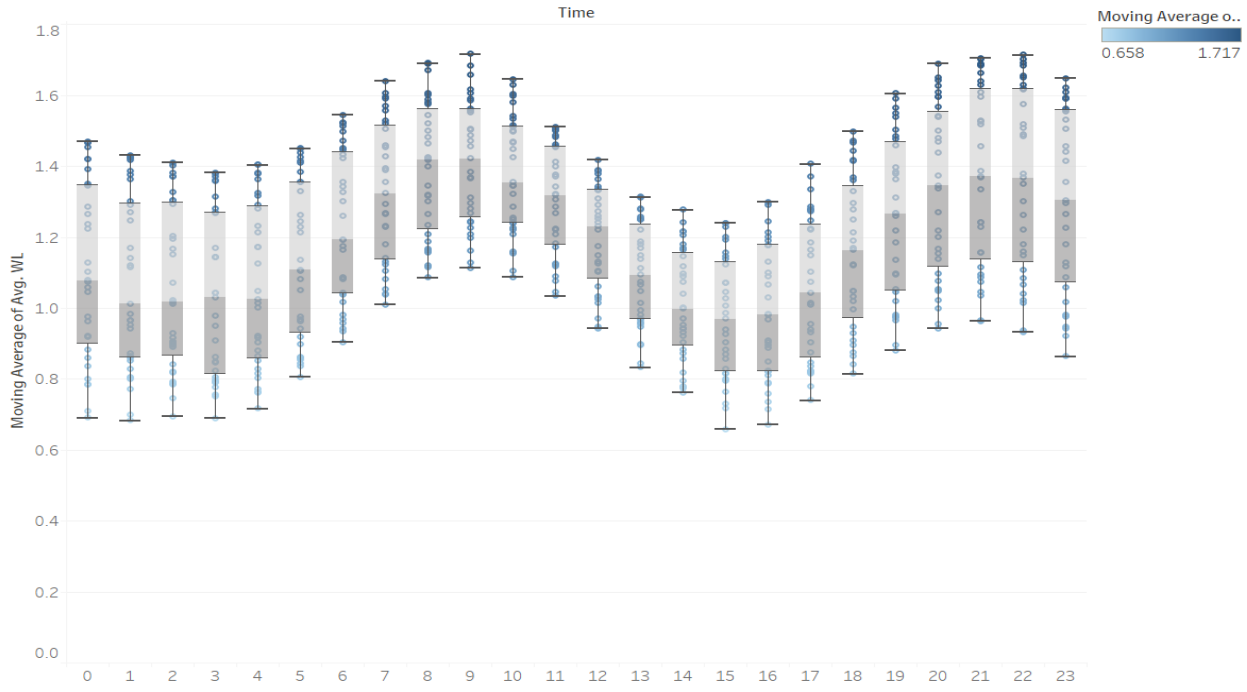
b. Two types of cycle with details and whisker plots.

Moving average of water levels

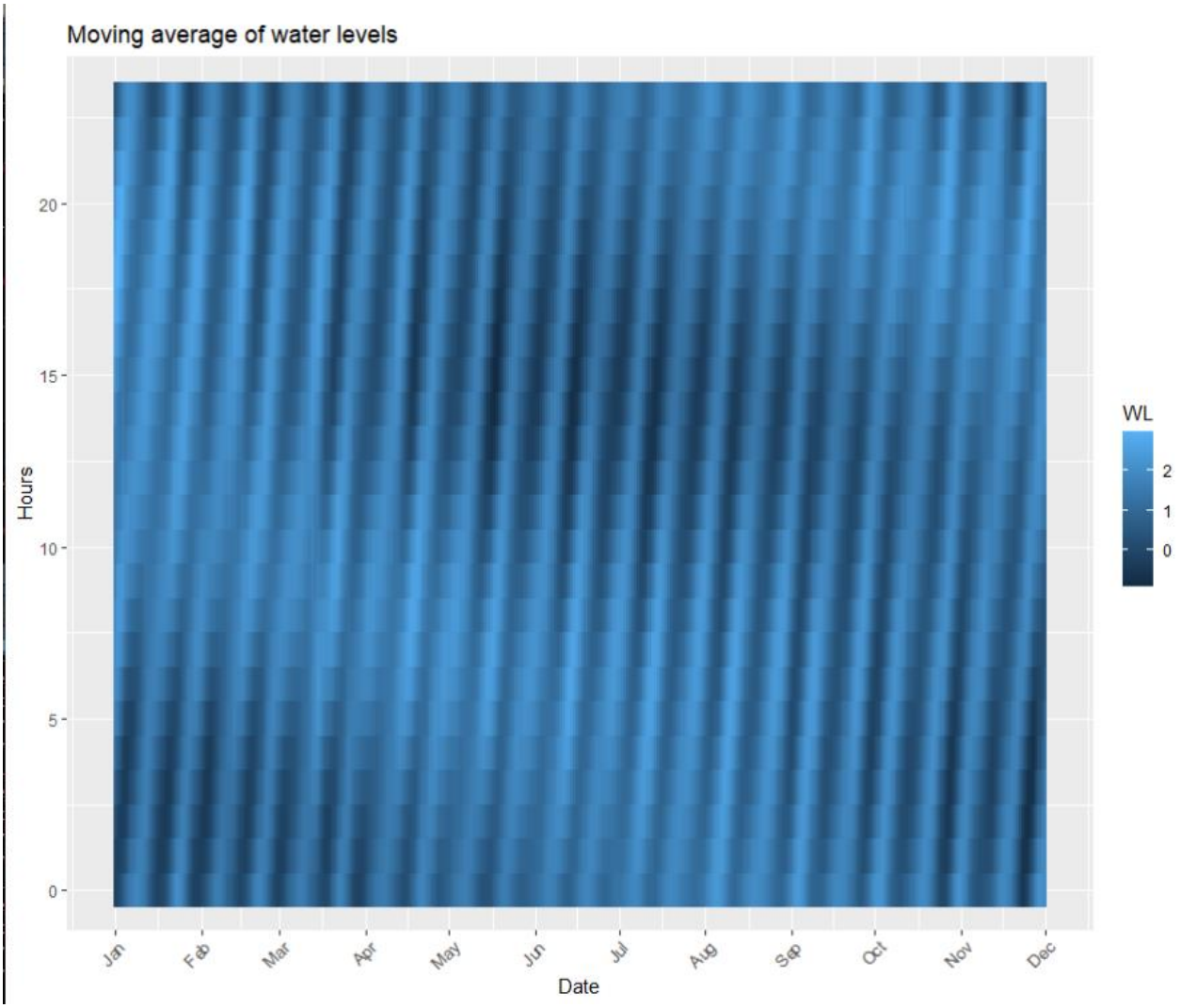


Date Day vs. Time Hour. Color shows Moving Average of Avg. WL.

Moving average of water levels

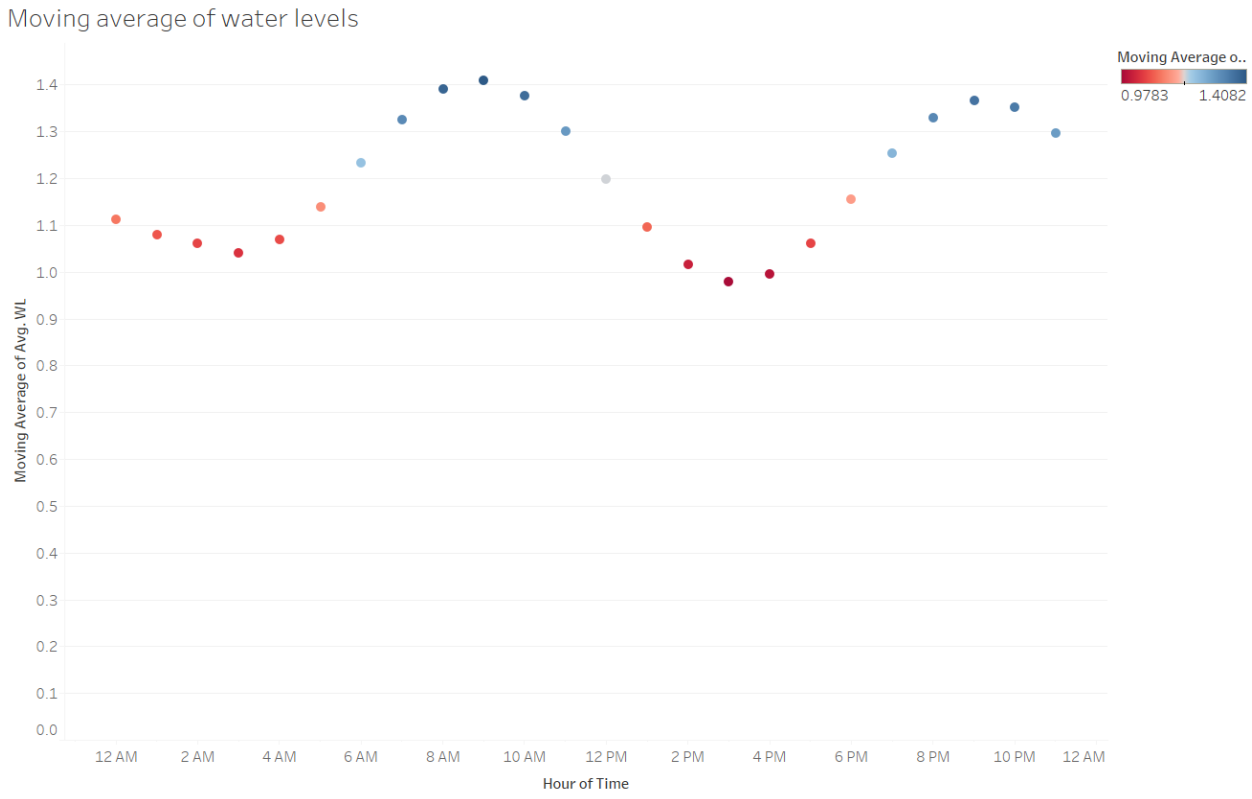


Moving Average of Avg. WL for each Time Hour. Color shows Moving Average of Avg. WL. Details are shown for Date Day.



c. The first graph represents average water levels of one month by 5 days range, filtered hours. Following tile graphs represent cycle that happens daily, and it is easier to see at what times water levels are low or high, the graphs filled with blue colors make it more understandable. R code shows light areas have more water levels than dark areas. It is more convenient and easier to make conclusion that tile plots are richer in details.

Problem 4.



The circle line plot shows average water levels in different times. Red-blue diverging color scales show extreme water levels, while dark blue represents the highest values, dark red the lowest values. We can see that there are low average water levels at 3 am and 3pm, high levels at 9 am and 10 pm.