**Dublin Business School**

**Electronic Assignment Cover sheet**

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**Course Title:** MSc Data Analytics

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**Module/Subject Title:** Data Visualisation (B9DA106)

**Assignment Title:** CA1 - Formative assessment

**Edward Tufte - Visual and Statistical Thinking**

Exercise 1 [50]

Read Edward Tufte’s “Visual and Statistical Thinking: Displays of Evidence for Making Decisions”.

Study the two case studies presented; the Cholera Epidemic in London in 1854 and the Decision to Launch the Space Shuttle Challenger in 1986.

Identify and critique the visualisation techniques that were applied in the two cases to communicate the information necessary to assist decision-making.

Guideline 800-1000 words.

**Tableau Academia: Tableau Data Journalism.**

Exercise 2 [25]

Module 7 (Slides 17, 20 and 22)

Build a story board to show deficient bridges (slide 17) and explore the unsafe bridges (slide 20). Build the story around the causes of the collapse of the Skagit River Bridge.

• What’s the rating of the Skagit River bridge that collapsed into the river? What other distinguishing

information can we obtain that might go into a story?

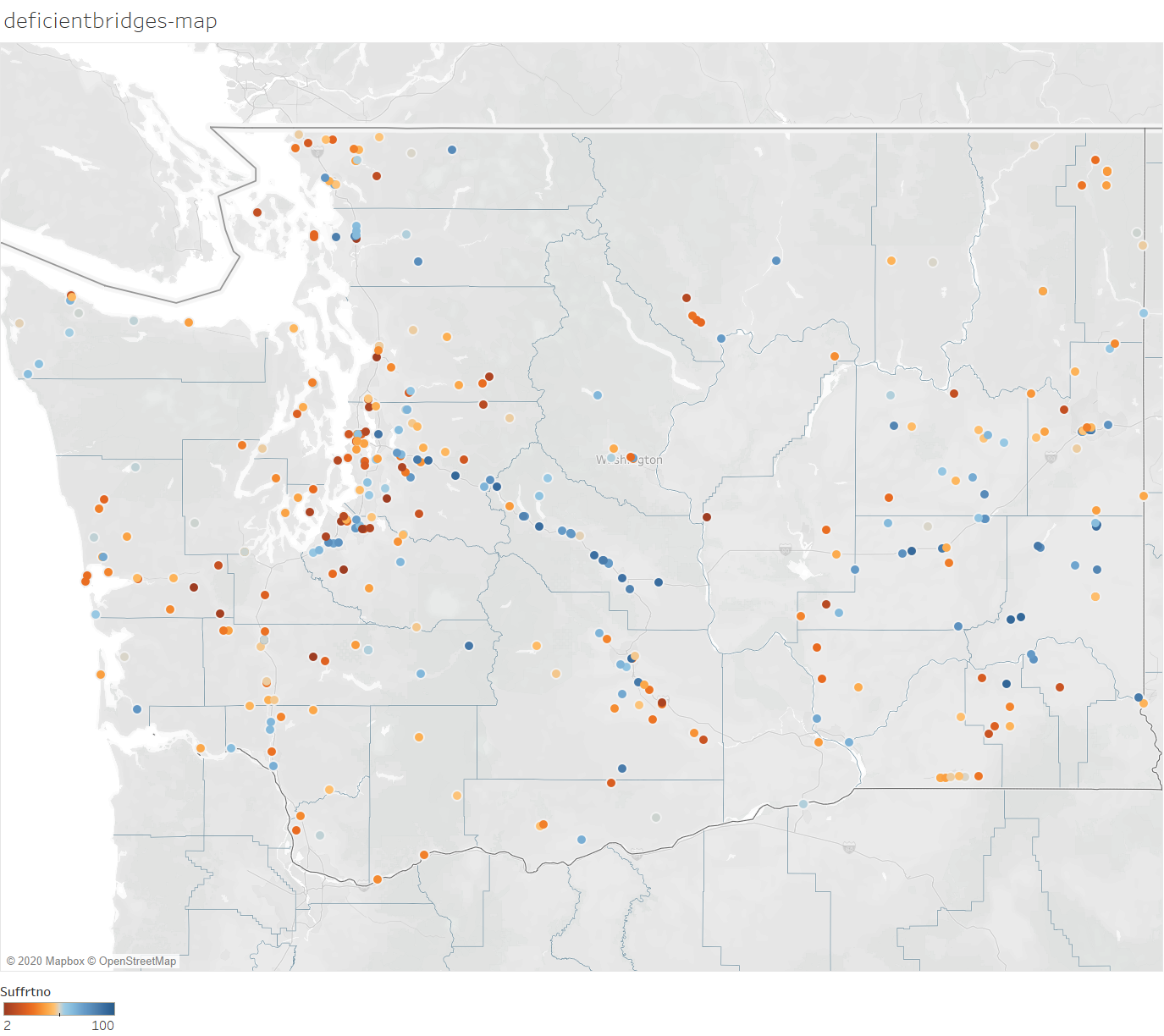
• When was the bridge last inspected and how often is it inspected?

• Is it considered fracture-critical, meaning one hit to a span can knock it out?

• How much average daily traffic does it get?

Note: - there is supporting background information on Moodle on the structural integrity of bridges in the U.S.A.

When verifying only Structurally Deficient bridges, none of the Skagit River bridges are shown on the map. However, it is possible to notice a significant number of other bridges that need attention as they have the sufficiency rating below 50 (eligible for replacement).

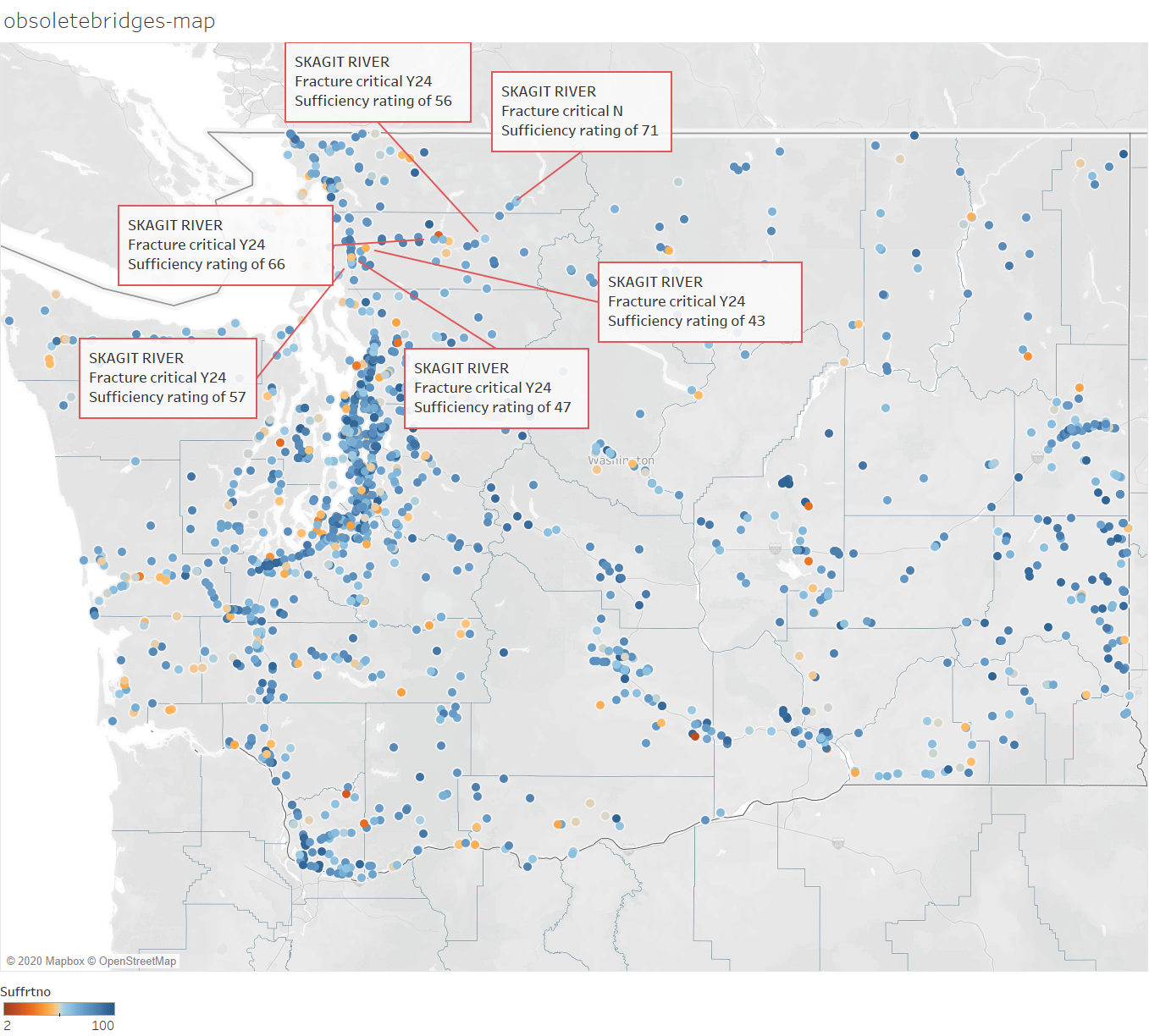


The next board is a heat map by county showing where the largest number of bridges are that require attention due to the low sufficiency rates, and Skagit County is not one of the worst locations.

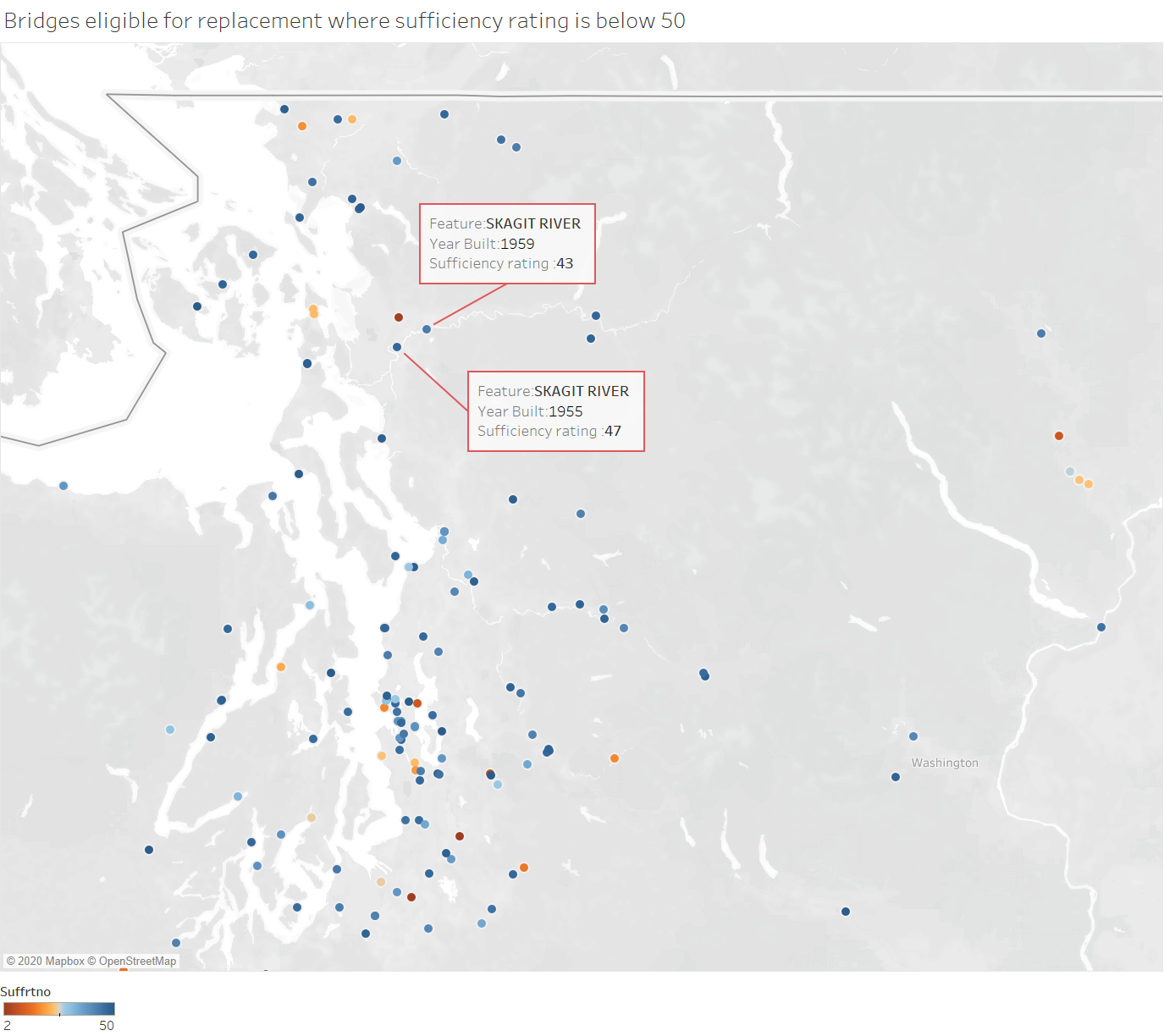
Map

Description automatically generated

Next, I changed the view to show only Functionally Obsolete bridges and then I can see the Skagit River bridges, and I can also notice that most of them are described as Fracture Critical and have the sufficiency rating below 50.



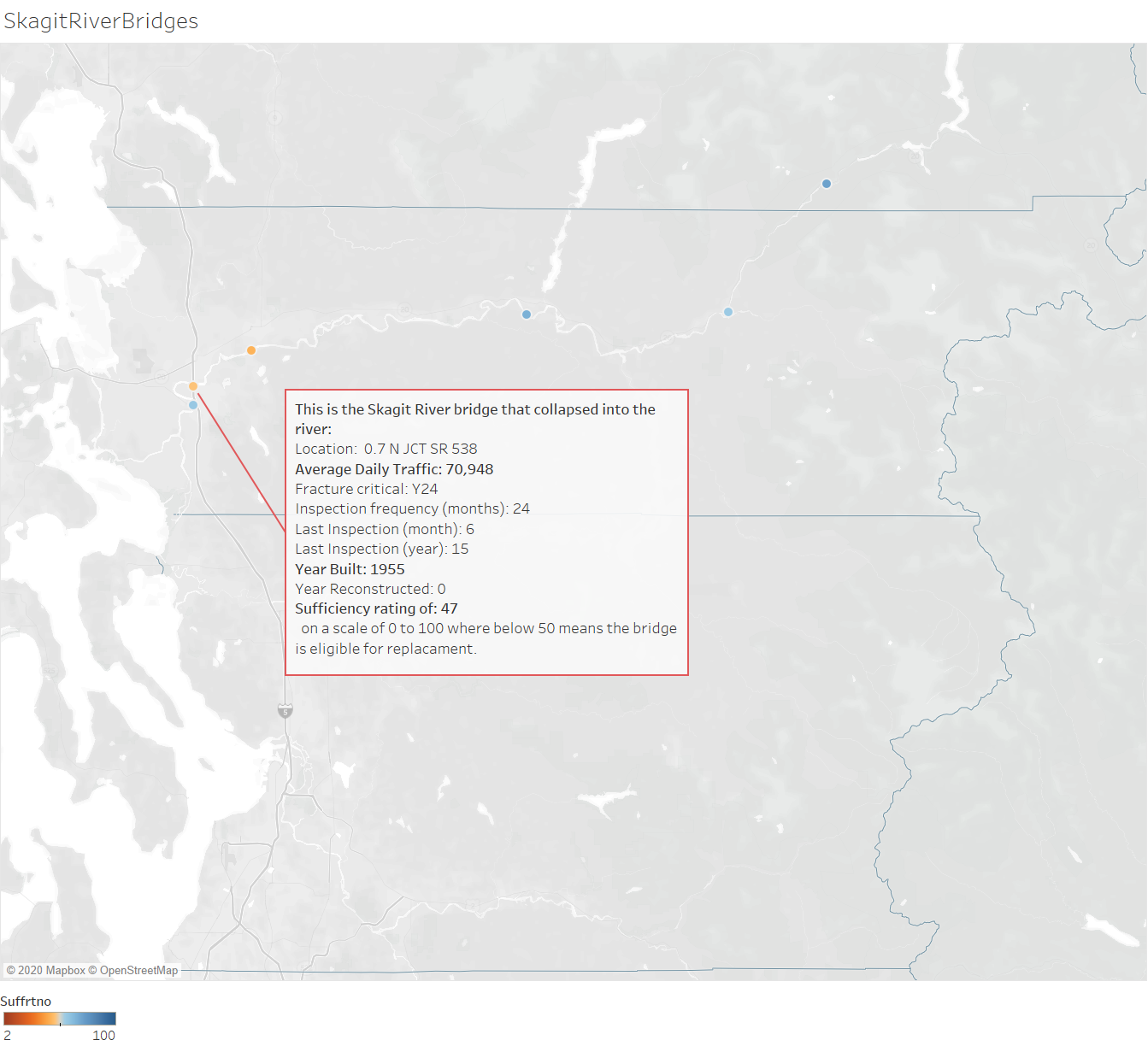
Then I selected only bridges eligible for replacement, where sufficiency rating is below 50, and where the bridge was still open to traffic, and I can now see only 2 of the 6 Skagit River bridges on the map.



Then, I added a filter by Feature to show only the Skagit bridges and based on some extra information from the news posted on The Seattle Times [1], I could figure out that the Skagit River bridge that collapsed was the one pointed out in the next board, as it is the only built on 1955.

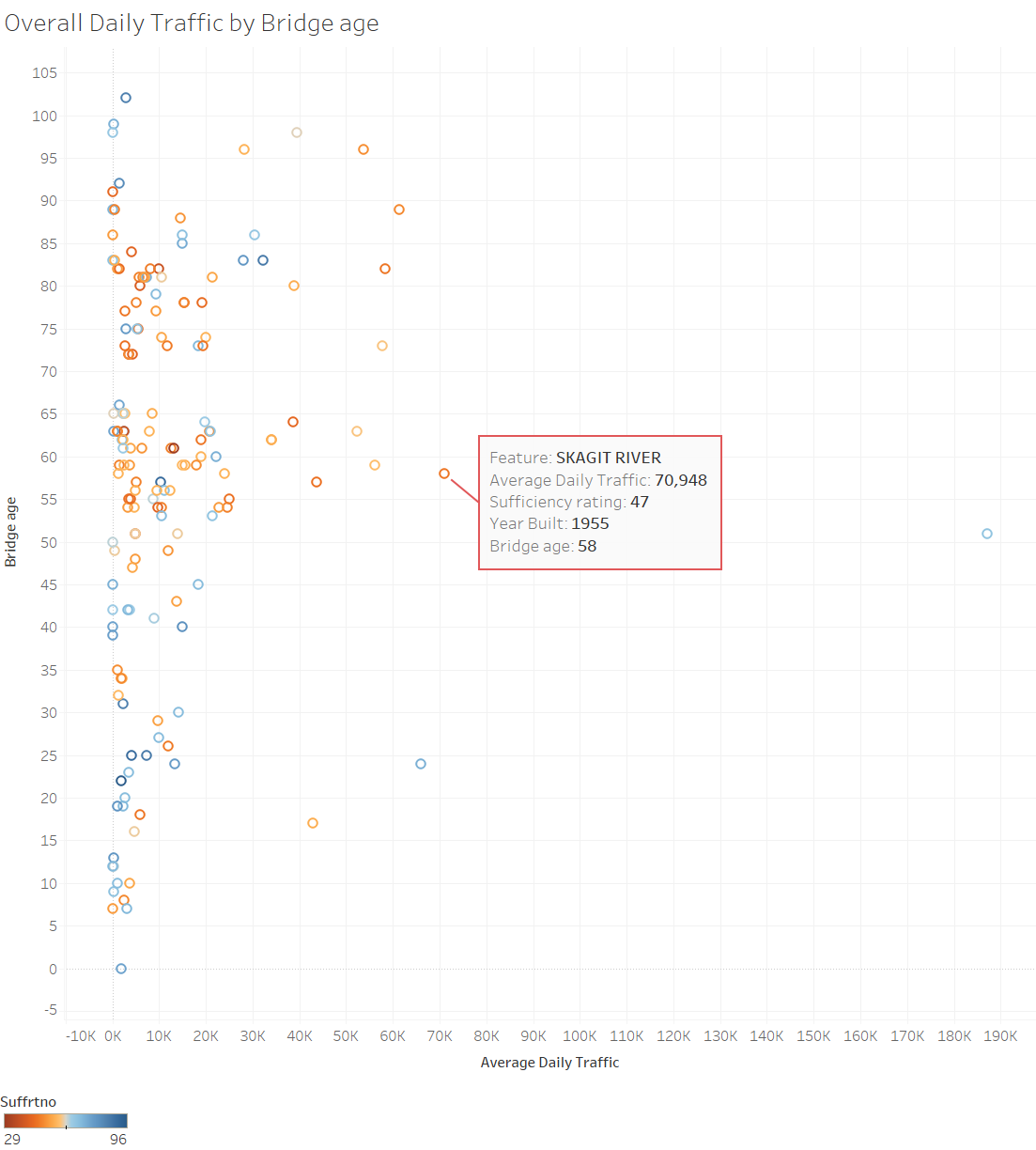
It has sufficiency rating of 47, however, it is not the worst rating for the bridges on that river, and it is described as Fracture Critical as it is an old bridge (1955).

The information available on the dataset shows the last inspection was on 06/2015 but the bridge collapsed in 2013, thus, there is no information when it was the last inspection before the collapse. The bridge was inspected each 24 months.



The average daily traffic was high on that bridge (70,948) when compared to other bridges where the sufficiency rating is higher (see Overall Daily Traffic by sufficiency rating board below). The below board also shows that there are a couple of other bridges on similar situation (sufficiency rating is below 50, a high average daily traffic, same generation or older and the structure were not reconstructed) that might require attention.





References:

[1] Span wasn’t built to take critical hit (2013) The Seattle Times. Available at: <https://www.seattletimes.com/seattle-news/span-wasnrsquot-built-to-take-critical-hit/>

(Accessed: 25 Oct 2020)

Exercise 3 [25]

Tableau provides access to COVID-19 coronavirus data resources https://www.tableau.com/covid-19-coronavirus-data-resources

The Tableau COVID-19 data stream is aggregated from the New York Times, the European Centre for Disease Prevention and Control, and the Public Health Agency of Canada and continues to be a vital resource for corporate and government decision makers as they navigate the global pandemic.

Access the Tableau COVOD-19 data stream,

https://data.world/covid-19-data-resource-hub/covid-19-case-counts/workspace/file?filename=COVID19+Activity.csv

and build a Tableau COVID-19 Dashboard including three visualizations telling a story related to the pandemic.

Covid-19 Dashboard

