

A photograph of a man and a woman standing next to two blue Just Eat Cycles in Edinburgh. They are smiling and talking. The background features the historic architecture of Edinburgh's Old Town and Princes Street. In the foreground, there are people walking and a street performer playing a guitar. The sky is clear and blue.

Just Eat Cycles

Edinburgh

Jerry Balloch June 2022

Just Eat Cycles

- The scheme was operated by Serco
- Just Eat were the sponsor
- Started in September 2018
- Mixed fleet of 500 pedal bikes and 150 eBikes
- 57,000 registered users
- Fastest growing scheme in Britain in 2020
- Ended in September 2021



Data sources

- **Just Eat Bike Hire Scheme**
data on start/stop time, start/end location, duration of rides
one json data set per month for 2019
- **power.larc.nasa.gov/data-access-viewer/**
site provided daily weather data for given timeframe
- **registry.opendata.aws/terrain-tiles/**
aws provided elevation data for each station based on lat/long coordinates
- open data, no ethical concerns, no personally identifiable information present in the data sets

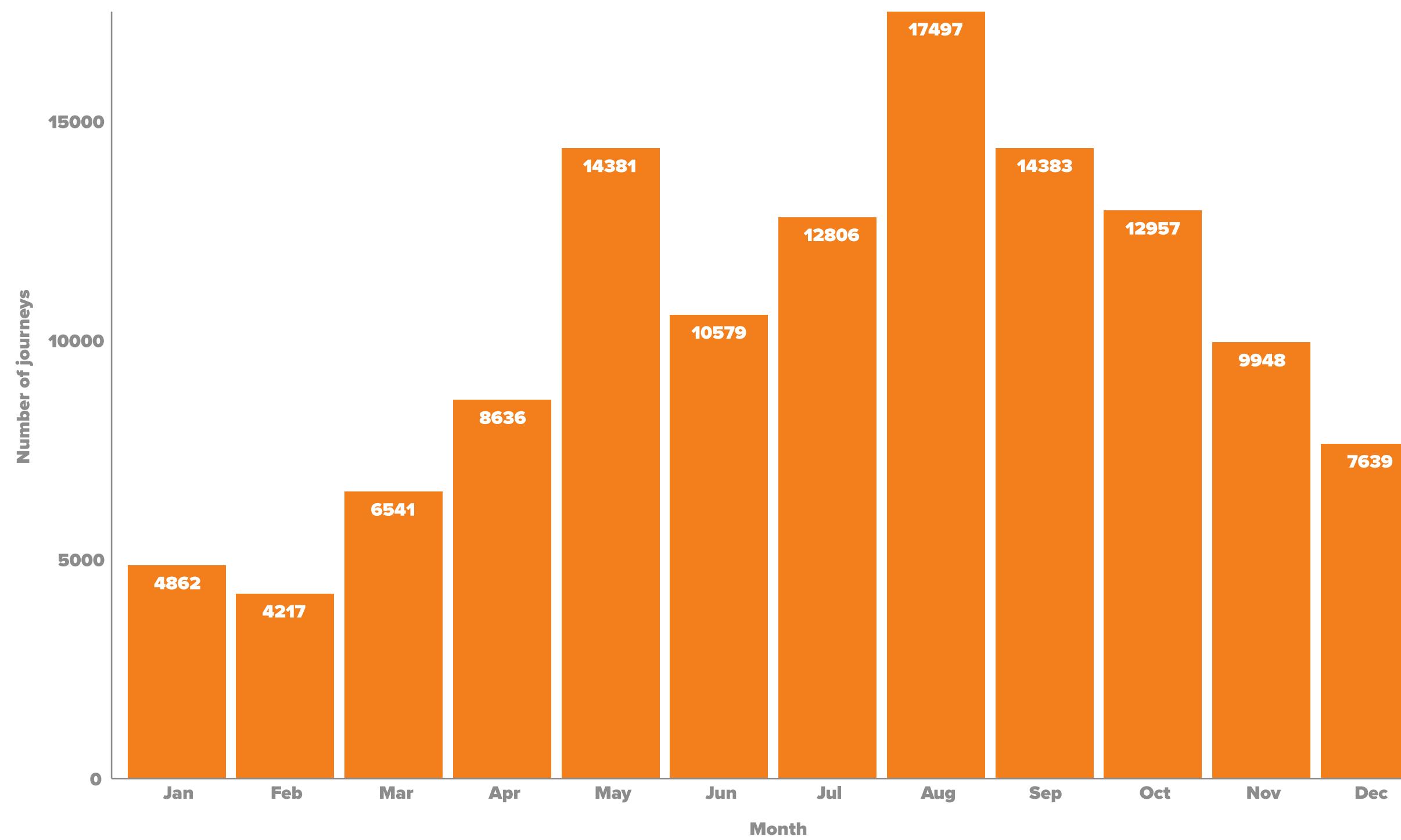


Did somebody say
Just EDA

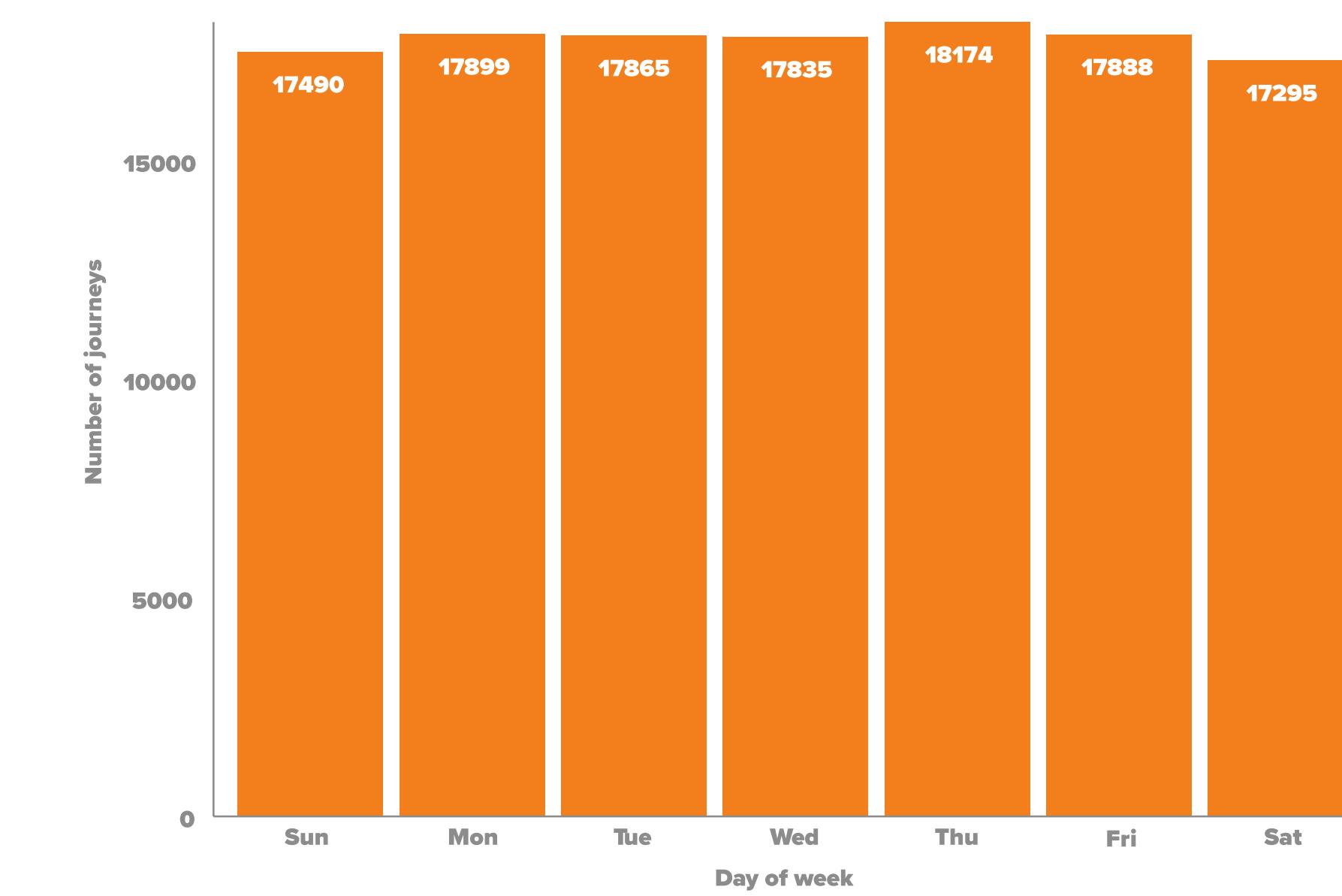
**Was the scheme well used?
When were the bikes hired?
Where were the most popular hire stations?
Does rain have an effect on bike hires?**

124,446 journeys made in 2019

TOTAL NUMBER OF BIKE JOURNEYS BY MONTH (2019)

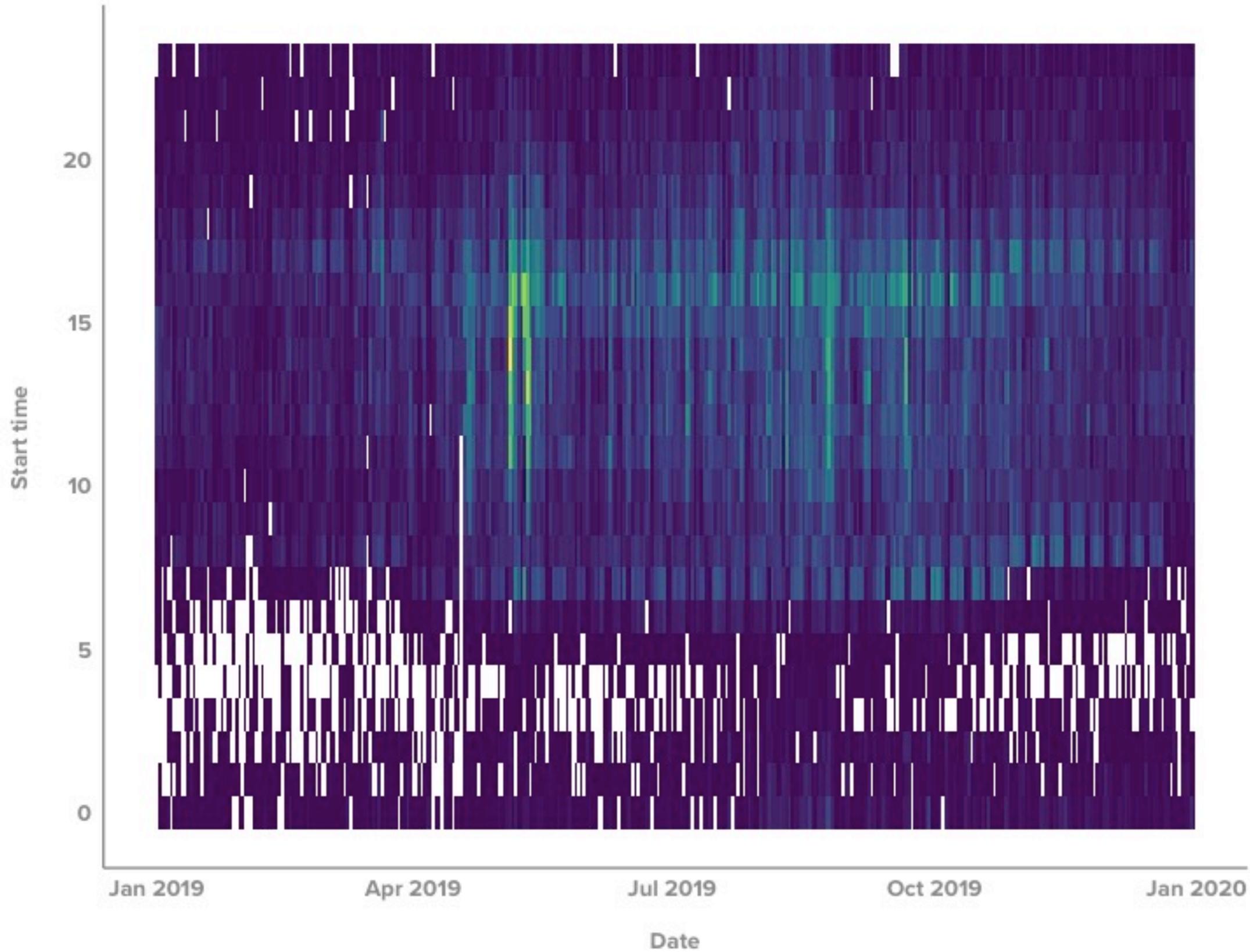


TOTAL NUMBER OF BIKE JOURNEYS BY DAY OF WEEK (2019)



Time of Day analysis

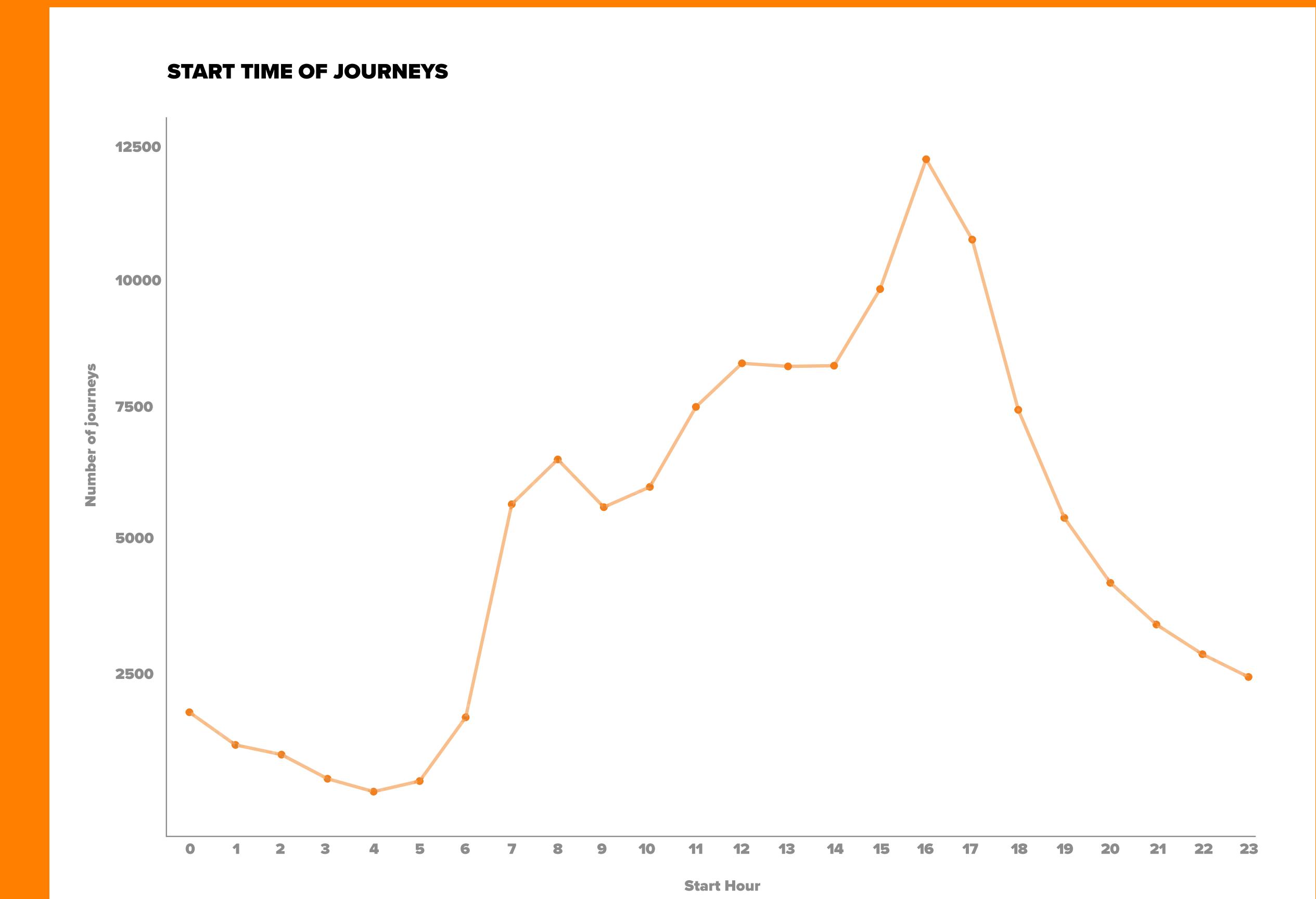
START TIME OF JOURNEYS HEATMAP



Lighter values indicate more journeys
Stripes around commuting times
May sees increase in day use
August has increase in late night use

Time of Day analysis

Activity peaks around 4pm with 12279 journeys, lasting average 24.27 mins.

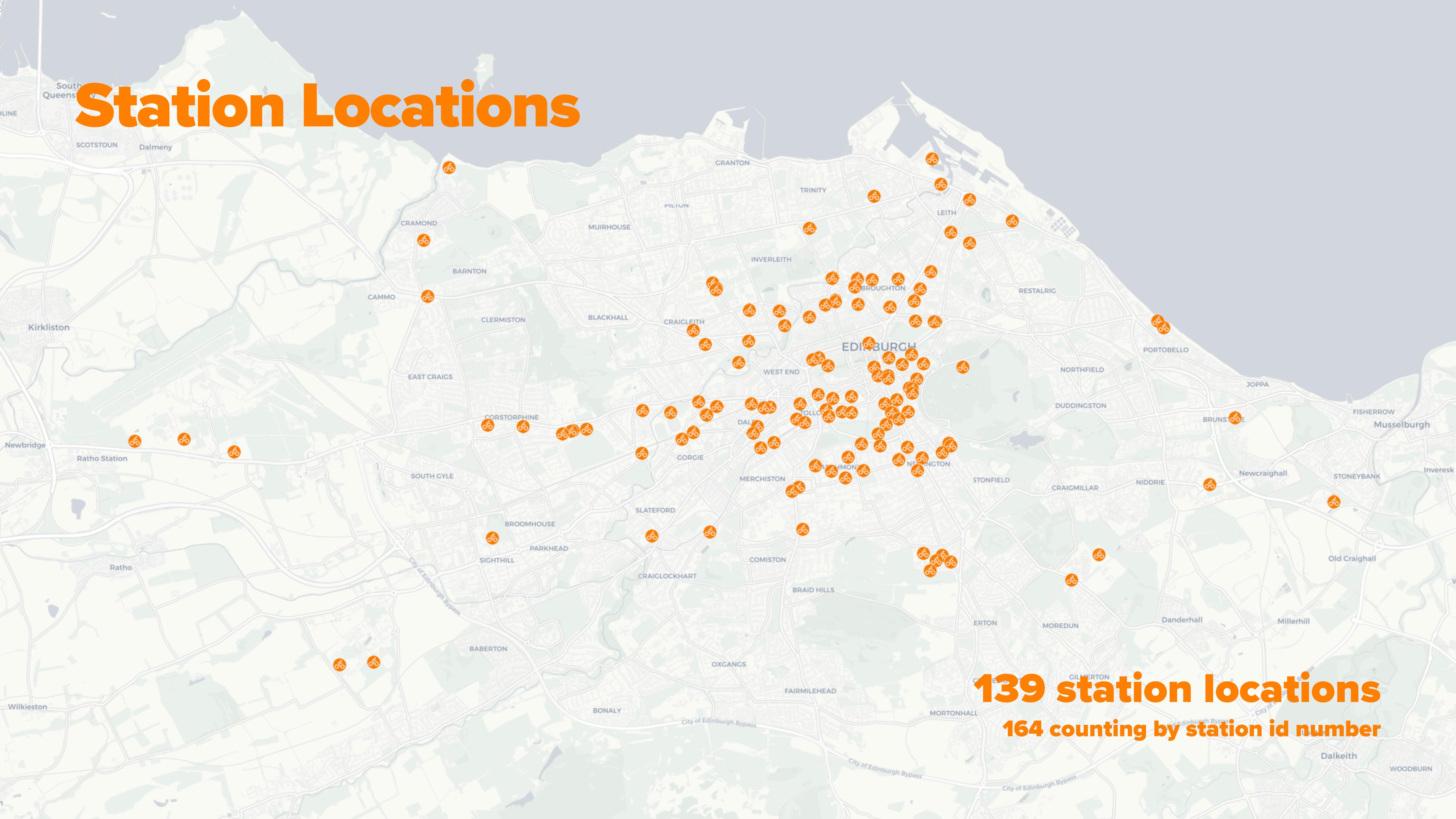


Time of Day analysis

Gym Bunnies - 5am to 7am:	2419	17.54 mins
Morning Commuters - 7am to 9am:	12452	17.87 mins
Day Trippers - 9am to 5pm:	66880	29.75 mins
Homeward Bounders - 5pm to 6.30pm:	14961	23.86 mins
Evening Movers - 6.30pm to 10pm:	16815	23.50 mins
Pub Ponies - 10pm to 5am:	10919	23.07 mins

Average journey time overall is 26.18 minutes

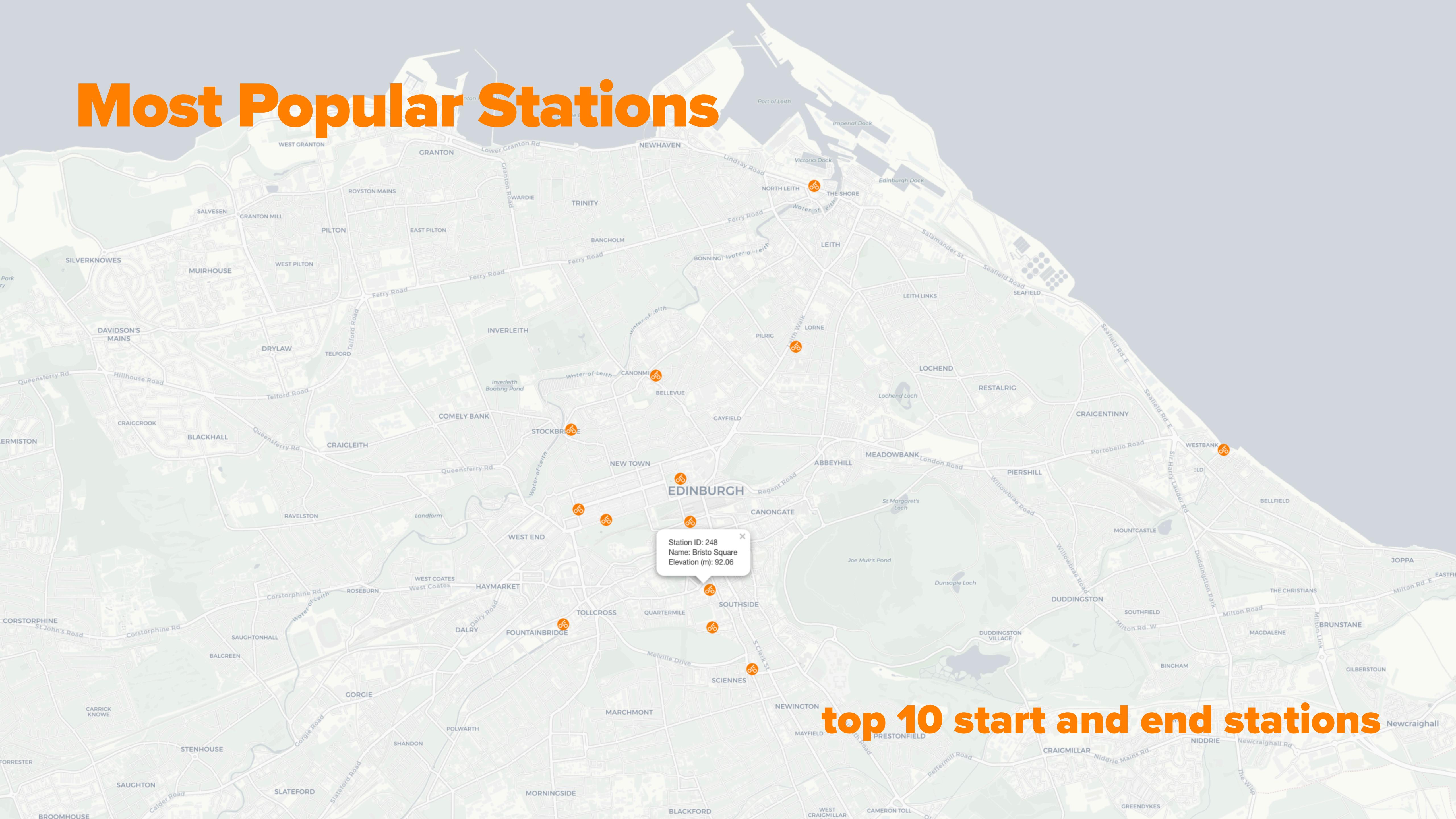
Station Locations



139 station locations

164 counting by station id number

Most Popular Stations



top 10 start and end stations

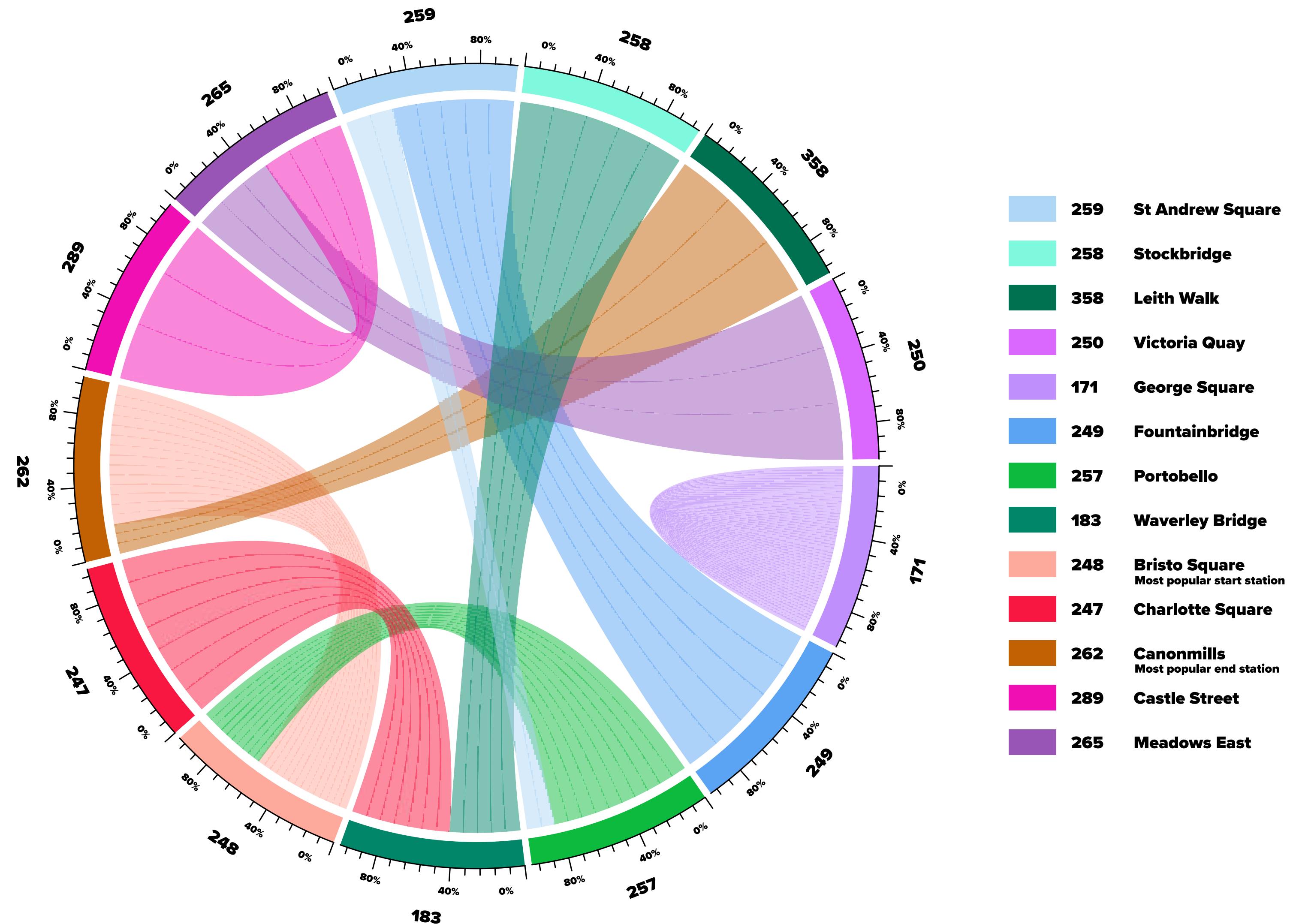
Most Popular Stations

Start :
Bristo Square 6542

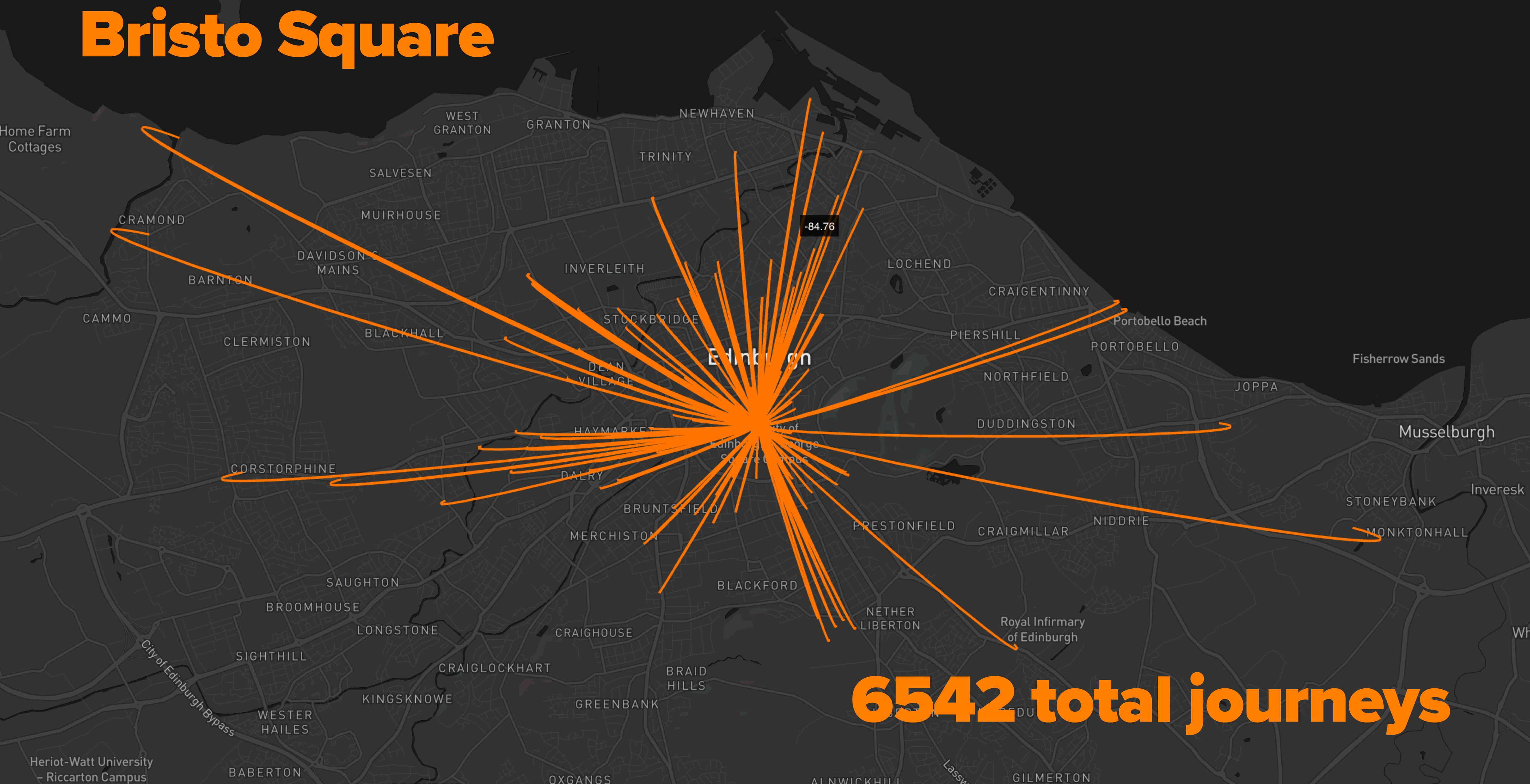
End :
Canonmills 4760

Round trips :
Portobello 1557

**Overall 9.6% of journeys
were round trips**



Bristo Square





68622

downhill journeys



A large, bold, orange number "12050" is displayed horizontally. To the left of the "1", there is a graphic element consisting of several thin, horizontal orange lines of varying lengths that meet at a single point, resembling a train's front or a starting line.

flat journeys

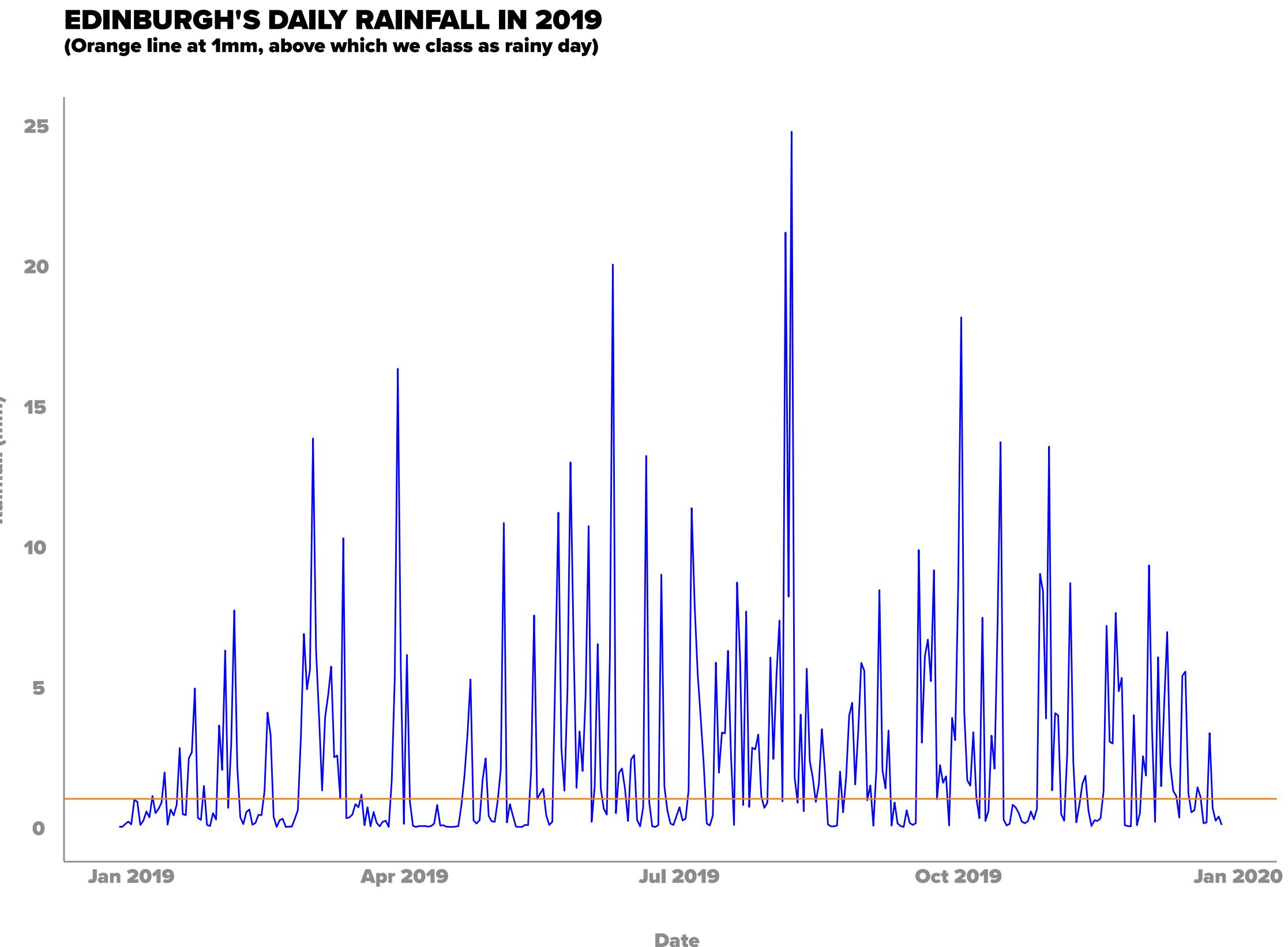


Is rain a factor?

According to www.statista.com

"A rainday is when one millimetre or more of rain occurs in a day."

Based on this I have classified rainy days as days where rainfall as recorded by www.power.larc.nasa.gov/ was equal to or over 1mm in Edinburgh.



PUTTING THE ‘HYPE’ IN HYPOTHESIS



Does rain
have an effect
on bike hires?

Does a rainy day have an effect on bike hires?

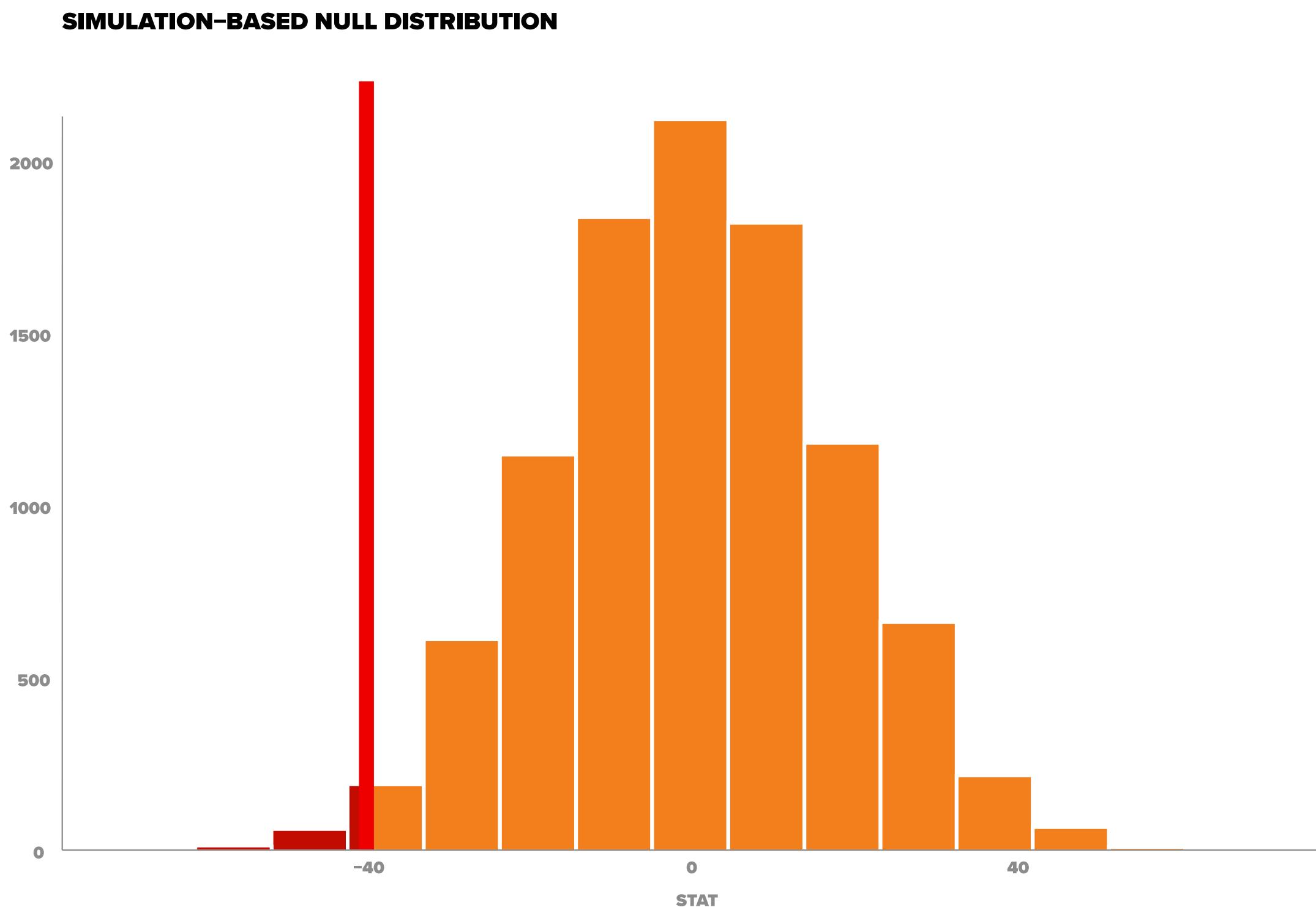
$\alpha = 0.05$

H₀ : Rain makes no difference to bike hires

H₁ : Rain has an impact on bike hires

p-value = 0.0116

The p-value $\leq \alpha$, so I reject the null hypothesis H₀ in favour of the alternative hypothesis H₁, that rain may have an effect on bike hires.



181 rain days in 2019



57708



46.7% wet journeys

A large, stylized orange number "66373" is displayed horizontally. A pair of black sunglasses with dark lenses is placed on top of the first two digits, "66".

66373

53.3% dry journeys

In conclusion

- I think that the scheme was well used
- Use is spread thought the day and into the night, late afternoon looks to be popular
- Hires peak in the summer, especially August, perhaps due to the festival
- Rain does affect hires but not by that much in 2019
- Future schemes could look to make more of round trips
- More eBikes for hilly routes, or first thing in morning at low elevation stations

EDINBURGH > LIVERPOOL

