

2018-2022 Jersey City Citi Bike Analysis

Last data refresh:
1/18/2024 5:40:11 PM UTC

Downloaded at:
1/18/2024 5:46:36 PM UTC



Data

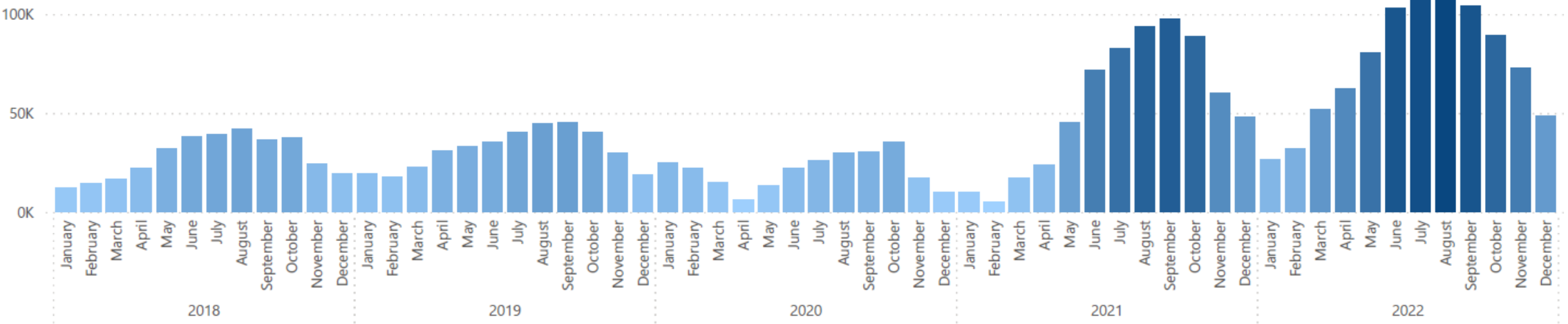
- Citi Bike data pulled from CitiBike's public data (<https://s3.amazonaws.com/tripdata/index.html>) includes anonymized data about each recorded bike ride such as where rides start (latitude, longitude, name, time) and end (latitude, longitude, name, time) as well as trip duration. Additional data is available for some years but not leverage in this analysis.
- Individual files downloaded locally for 2018 through 2022 and processed using the jupyter notebook file included in my [Tableau analysis workspace](#) to create a single source file
 - Citi Bike's changed the data format between Jan 2021 and Feb 2021 so the script runs separately for Jan 2018 - Jan 2021 and Feb 2021 - Dec 2022. Then updates header names to align and merges the two chunks. Nulls are left in the columns that exist in one but not the other.
 - Citi Bike's data has multiple latitude / longitude locations tied to the same station name. As a result, this file consolidates latitude and longitude coordinates to a single latitude / longitude per station name by finding the average value use at each starting and each end location and overwriting the downloaded values
- Additional modeling completed within Power BI:
 - Created column to display weekday name for both start and end dates
 - Created ride count measure
 - Created YoY% Ride Count change measure

Features / Reports

- Monthly total ride count with YoY % growth in parallel
- Monthly total ride count with YoY % growth in parallel separated by User Type (Subscriber vs. Not)
- Interactive 2021-2022 Monthly Usage filterable by year/quarter/month/year and *Starting* Station name with map indicating ride count and YoY% growth
- Interactive 2021-2022 Daily Usage filterable by year/quarter/month/day of the week and *Starting* Station name with map indicating ride count
- Interactive 2021-2022 Daily Usage filterable by year/quarter/month/day of the week and *Ending* Station name with map indicating ride count
- Interactive 2021-2022 Ride Count station maps for *Starting* and *Ending* stations by year/quarter/month

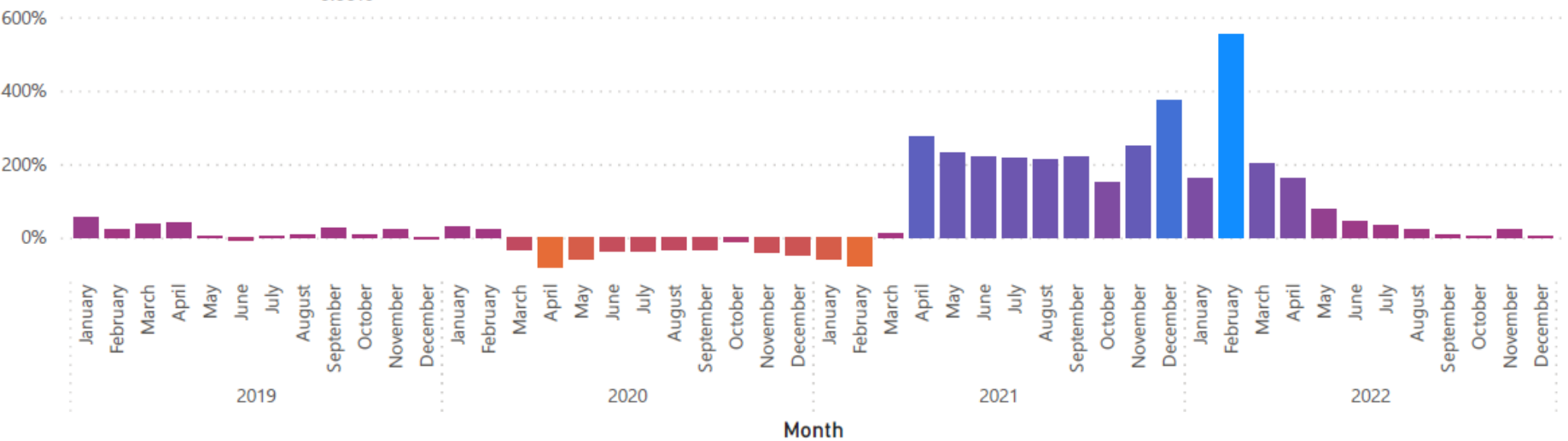
2018-2022 Monthly Usage: Ride Count

Count of ride_id 0.00M 0.12M



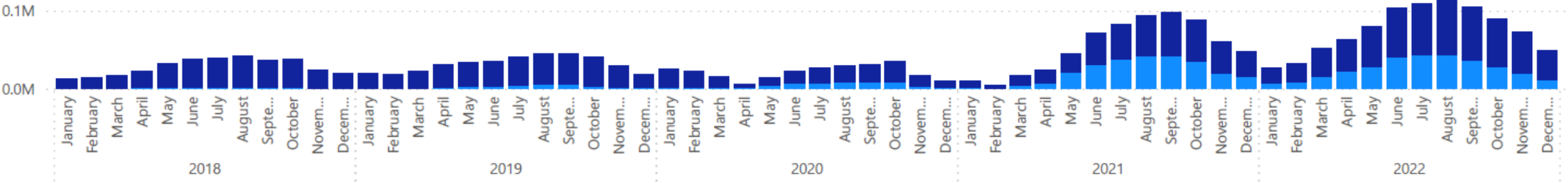
2019-2022 Monthly YoY % Growth: Ride Count

YoY% Ride Count Growth -79.56% 0.00% 553.78%



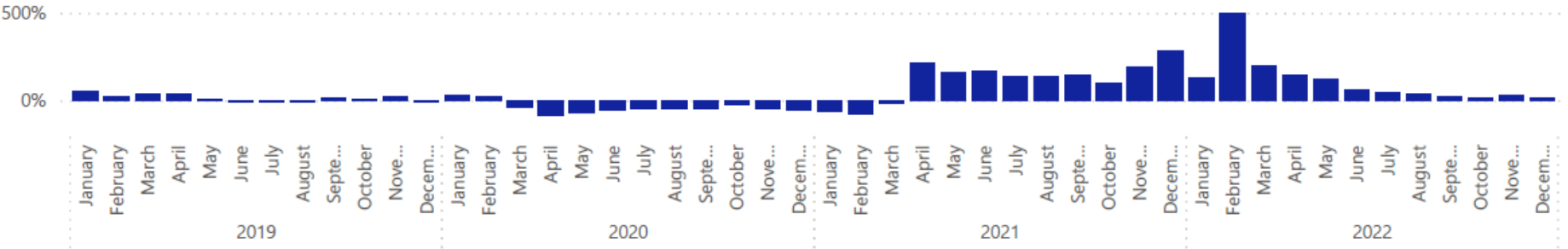
2018-2022 Monthly Usage: Ride Count by Usertype

User Types: Non-Subscribers Subscribers



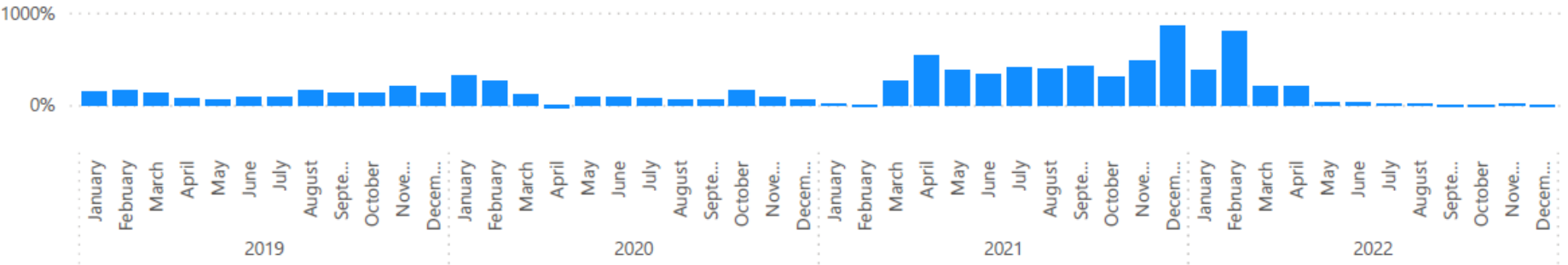
2019-2022 Monthly YoY % Growth: Subscriber Ride Count

User Types: Subscribers



2019-2022 Monthly YoY % Growth: Non-Subscriber Ride Count

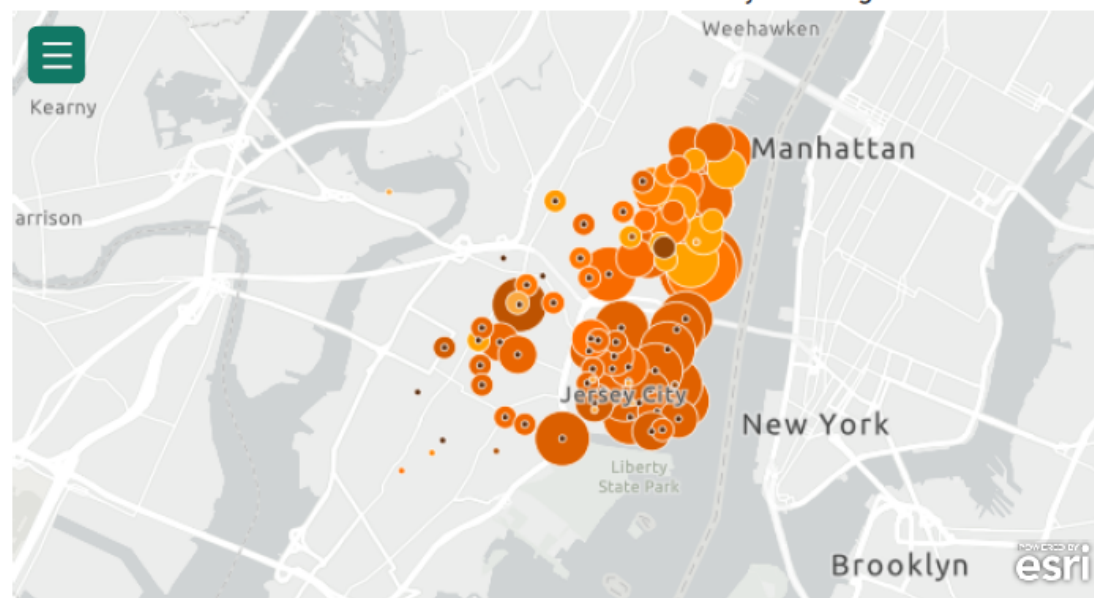
User Types: Non-Subscribers



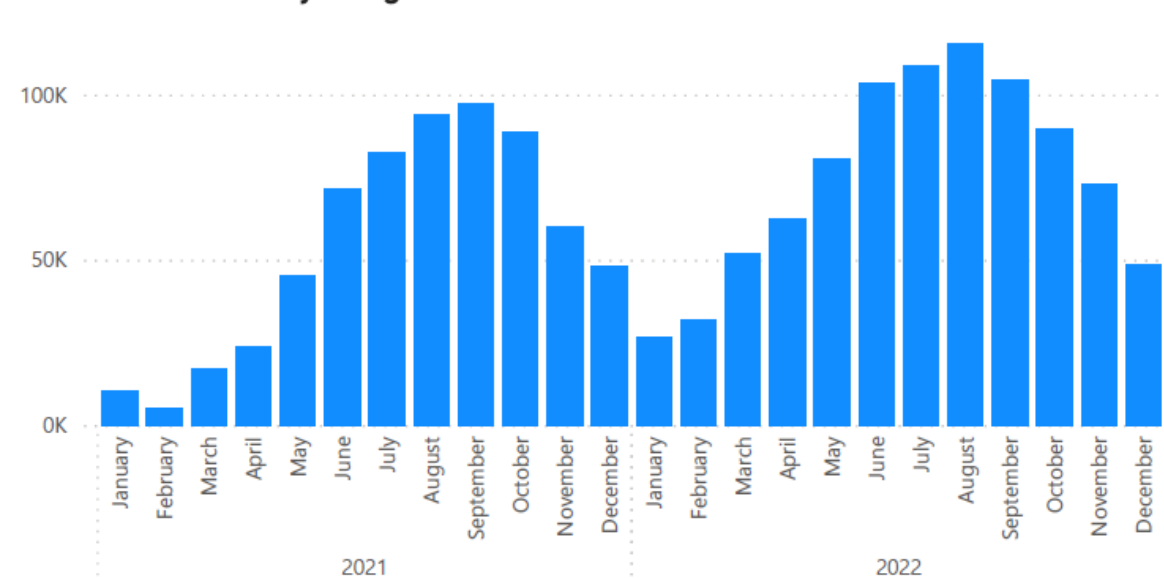
☐ 2021
☐ 2022

Start Station Name	Ride Count
Grove St PATH	72002
South Waterfront Walkway - Sinatra Dr & 1 St	61499
Hoboken Terminal - Hudson St & Hudson Pl	52369
Hoboken Terminal - River St & Hudson Pl	52282
Newport Pkwy	43370
Hamilton Park	39226
Newport PATH	37867
Marin Light Rail	35732
Hoboken Ave at Monmouth St	32829
Columbus Dr at Exchange Pl	31581
Harborside	30181
11 St & Washington St	29651
14 St Ferry - 14 St & Shipyard Ln	28935
Liberty Light Rail	28734
Washington St	28173
Total	1538557

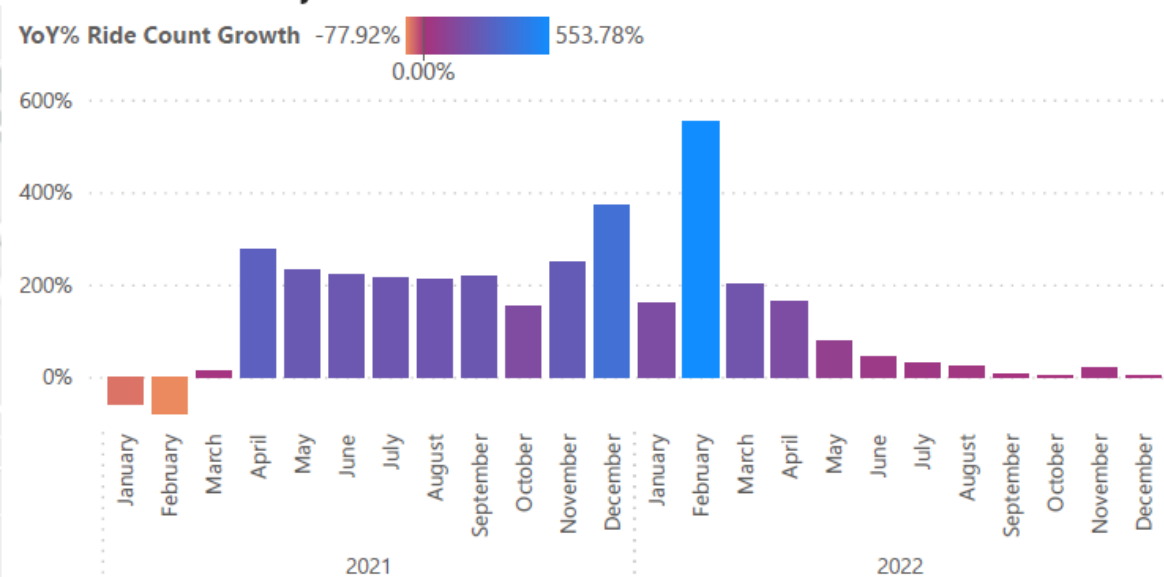
2021-2022 Ride Count (size) and YoY% Growth (color) by Starting Station



2021-2022 Monthly Usage: Ride Count



2021-2022 Monthly YoY % Growth: Ride Count



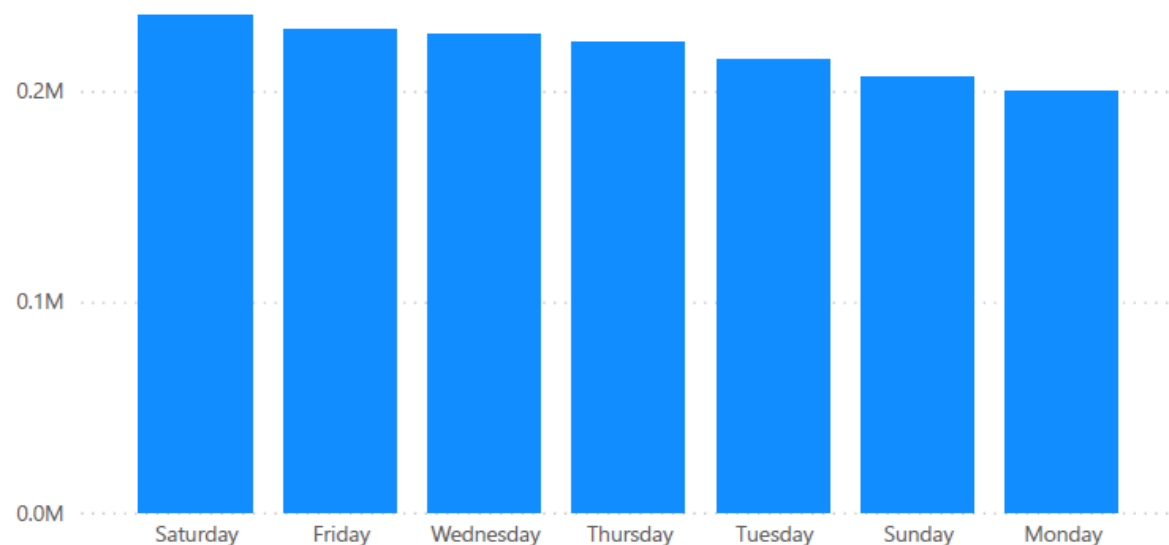
Select Desired Filter
Year, Quarter, Month

✓ ☐ 2021

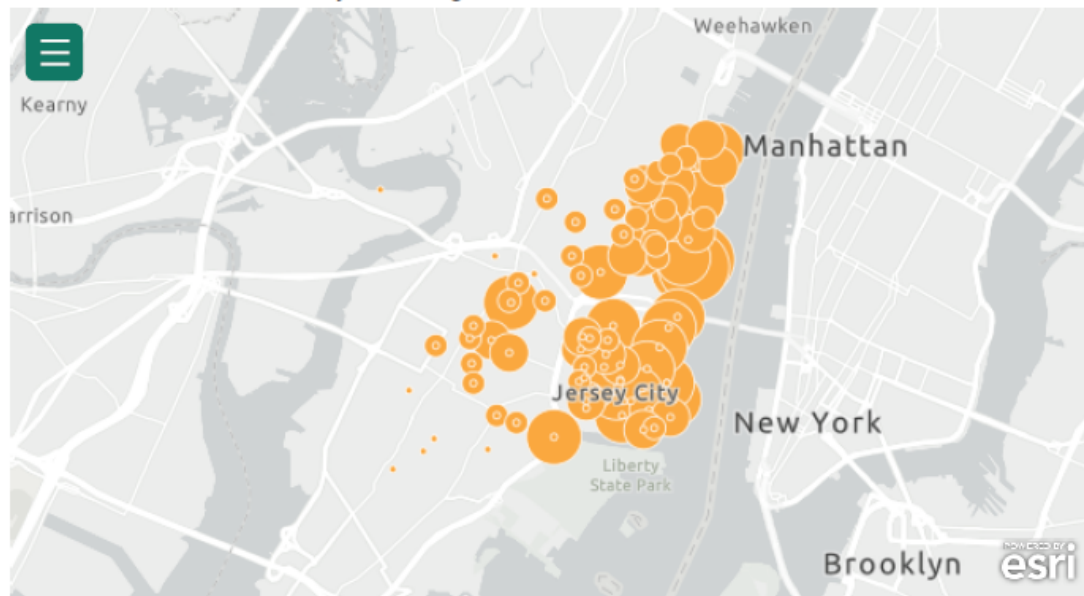
✓ ☐ 2022

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Total	1538557

2021-2022 Daily Usage Ride Count



2021-2022 Ride Count by Starting Station



Selecting different days of the week, one can see the trends throughout the week such as:

- Mon - Thu: the following stations have >5k rides - Grove St Path, South Waterfront Walkway - Sinatra Dr & 1 St, Hoboken Terminal - River St & Hudson Pl, Hoboken Terminal - Hudson St & Hudson Pl, Newport Pkwy, Hamilton Park, Newport PATH
- Friday usage adds 2 more stations to be above 5k rides - Margin Light Rail, Hoboken Ave at Monmouth St
- Saturday adds even more without others dropping below 5k - Liberty Light Rail, 14 St Ferry - 14 St & Shipyard Ln, Columbus Dr at Exchange Pl, Harborside
- Sunday usage sees the following stations drop below 5k while Margin Light Rail & Liberty Light Rail remained from the Fri & Sat upticks
 - Hamilton Park (4999) dropped from Mon-Sat,
 - Hoboken Ave at Monmouth St dropped from Fri & Sat,
 - 14 St Ferry - 14 St & Shipyard Ln, Columbus Dr at Exchange Pl, Harborside dropped from Sat

Looking at these trends can help optimize maintenance schedules as well as keeping an eye how large a station needs to be.

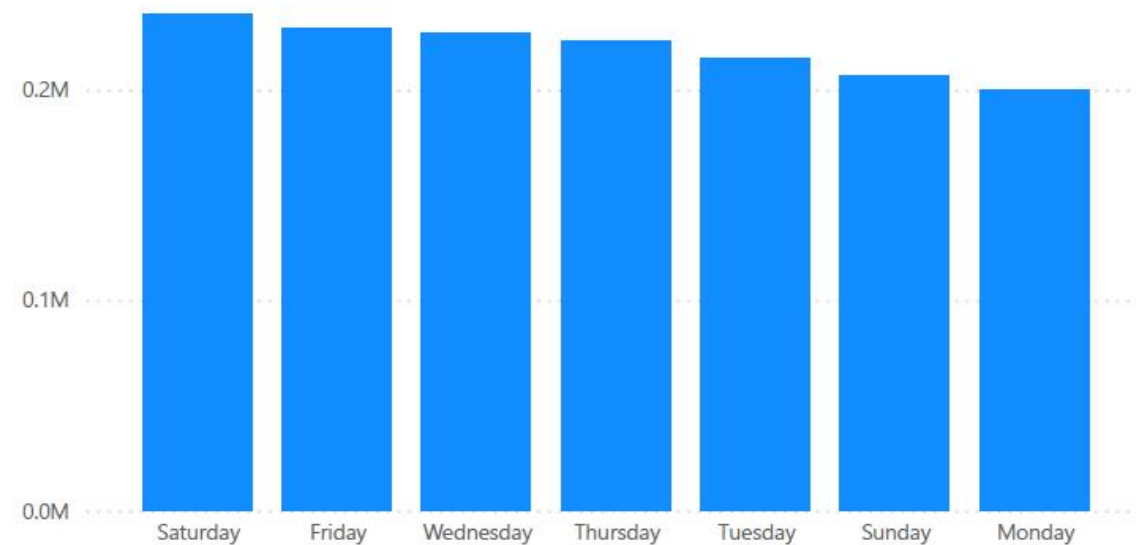
Select Desired Filter
Year, Quarter, Month

✓ ☐ 2021

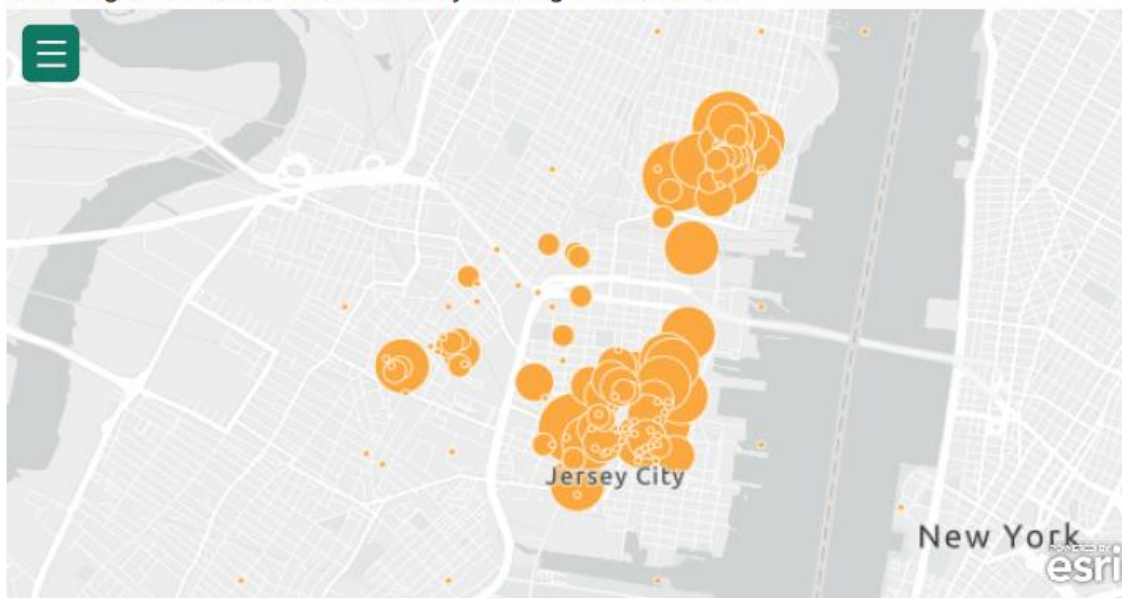
✓ ☐ 2022

End Station Name	Ride Count
Grove St PATH	75507
South Waterfront Walkway - Sinatra Dr & 1 St	62099
Hoboken Terminal - Hudson St & Hudson Pl	52590
Hoboken Terminal - River St & Hudson Pl	51364
Newport Pkwy	43175
Hamilton Park	39724
Newport PATH	37906
Marin Light Rail	35281
Hoboken Ave at Monmouth St	33994
Columbus Dr at Exchange Pl	32815
Harborside	30269
14 St Ferry - 14 St & Shipyard Ln	29734
11 St & Washington St	29516
Liberty Light Rail	29034
City Hall	28351
Total	1538557

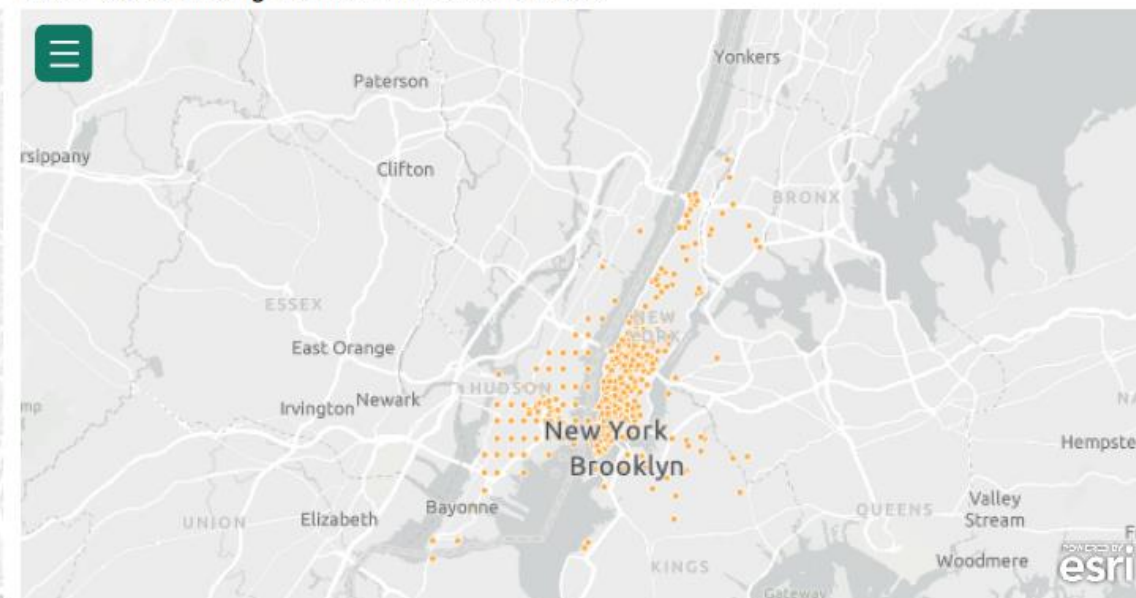
2021-2022 Daily Usage Ride Count



Filtering 2021-2022 Ride Count by Ending Station > 55



2021-2022 Ending Station Ride Count < 250



Note that the starting station data for NYC / Manhattan is in another data set - recommend only viewing Jersey City areas for this compare.

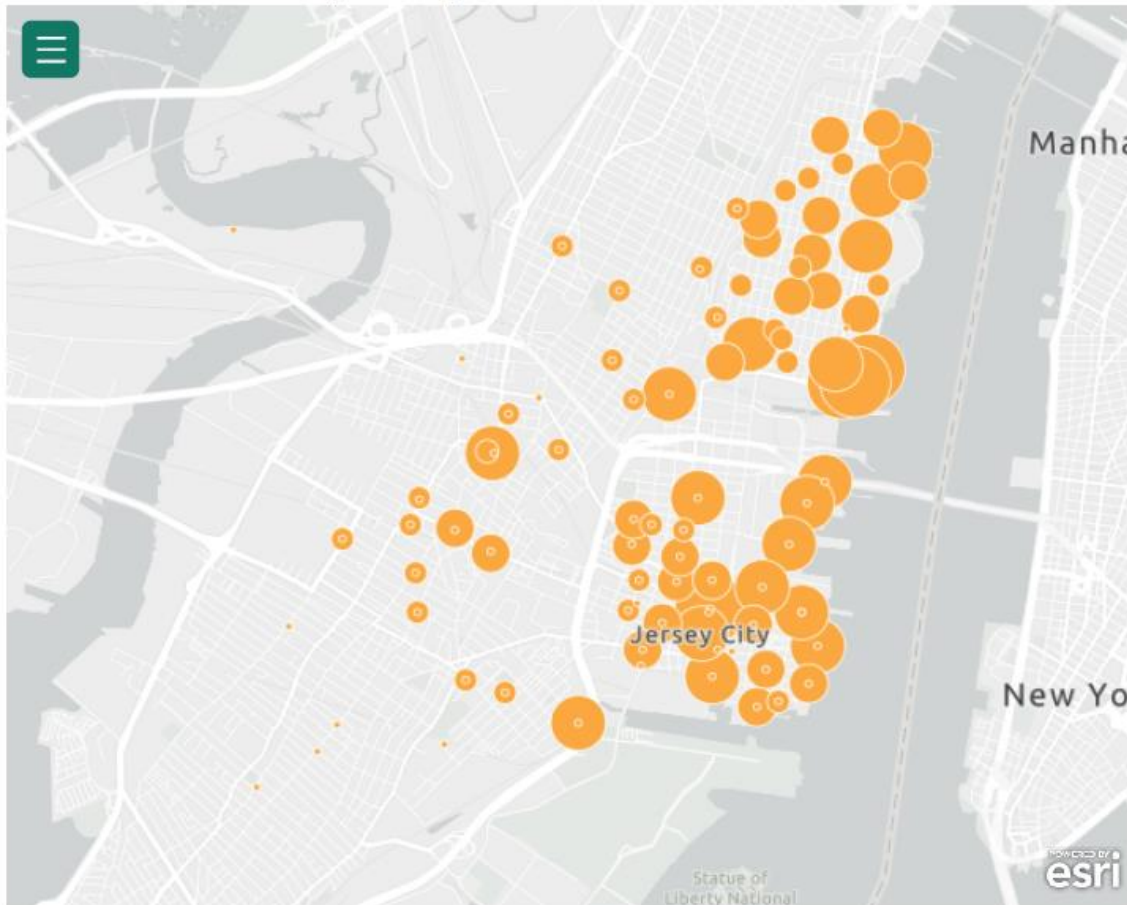
- These interactive maps allow visually connecting where rides start and end. Select either a starting station or an ending location (station may not exist) and the other map will filter based on your selection.
- Additionally, you can see where rides end but there aren't "stations" by the comparing where additional markers are on the Ending Station map that do not exist on the Starting Station map. This can be a starting point for considering where to put additional stations.

Year, Quarter, Mont... ▾

▾ ☐ 2021

▾ ☐ 2022

2021-2022 Ride Count by Starting Station



2021-2022 Ride Count by Ending Station

