**Tableau Citi Bike Analysis | Sarah Nystrom**

Within this story are eight (8) tabs, including two Dashboards. The data from Citi Bike is specific to the New Jersey/New York area along the Hudson River in the year 2024. Below is the analysis for each tab and the data visualization(s) included.

**Map of All Stations.** This visualization shows the locations of Citi Bike stations in and around Jersey City, New Jersey. There are clear larger clusters of stations, primarily in the zip codes 07030, 07302, and 07310. Moving west, away from the Hudson River, the clusters become fewer and less dense. There are single station outliers, for example the solitary station in 07032. The large clusters of stations make sense as they are in downtown Jersey City, Hoboken, and Weehawken. These areas are popular with tourists, have businesses, are lined with piers, and are on the other side of New York City via the Lincoln Tunnel and the Holland Tunnel.

**Most Popular Starting Stations.** The circle indicators use both size and color intensity to indicate the most popular starting stations. The larger, dark blue circles show the stations with the most ride starts. There are distinct stations on the edge of the geographic data that are highly popular, for example, the Water Street & Gouverneur Lane station at the edge of the 07307 zip code region. These stations could be indicative of people living outside the downtown areas using Citi Bikes to commute in to work. More data analysis would be needed to confirm this.

**Most Popular Ending Stations.** The circle indicators use both size and color intensity to indicate the most popular starting stations. The larger, deep red circles show the stations with the most ride ends. While there are highly popular stations in downtown/Hoboken, the majority of the rides end on the west side of New York City. This could confirm the bikes are used by workers commuting from New Jersey to New York. Because bikes are not allowed in either the Lincoln Tunnel or the Holland Tunnel, analyzing the ridership of the ferries could confirm the usage of Citi Bikes for commuting.

**Dashboard #1: Top 10 Starting/Ending Stations.** This interactive dashboard shows a map of all stations and two bar graphs, one of 10 most popular starting stations and one of 10 most popular ending stations. Clicking on a bar in the graphs will isolate the station location on the map. The two outstanding popular stations for both graphs are 1) Hoboken Terminal – River St & Hudson Pl and 2) Grove St PATH. The fact these two stations are both top for starting and ending stations lends credence to the hypothesis that Citi Bikes in this area are being used by people commuting to and from work, social events, etc.

**Time of Day Starts by Bike Type.** This visualization shows electric bikes are more popular than classic bikes, although both types follow a similar line of usage times. There are clear surges in usage around work commuting times, being 7-8am and 5-6pm. The surge at 5-6pm is higher than the morning surge by almost two times for electric bikes. The difference in usage during surges for classic bikes is not as dramatic.

**Time of Day Ends by Bike Type.** This visualization mirrors the data visualization in the Time of Day Starts by Bike Type with surges around commuting time, specifically at 8am, 5pm, and 6pm. The surge at 5-6pm is higher than the morning surge by almost two times for electric bikes. The difference in usage during surges for classic bikes is not as dramatic. This visualization and the start times indicate more people use bikes in the after-work hours. This could be because start times are strictly enforced if the riders are going to work, whereas ending times can vary. More analysis would be needed to confirm that hypothesis.

**Count of Rides by Time of the Day.** This visualization confirms the surges around the commuting hours shown in the previous two line visualizations, including the most usage in the after-work hours of 5pm and 6pm. However, this visualization also shows fairly consistent usage between 7am and 8pm. The clear low usage times are between 10pm and 5am.

**Dashboard #2: Average Trip Duration.** This dashboard has three visualizations: 1) Average Trip Duration in Minutes,2) Average Ride Time by Weekday by Member vs Casual User, and 3) Average Trip Duration in Minutes for Member vs Casual User. The interactive feature sorts out the member and casual rides when the bar graphs are clicked on. Average ride times are between 7-14 minutes with distinct outliers, including the longest ride of over 96 hours. Casual riders (non-members) have ride times double that or more than those of Citi Bike members. For both groups of riders, Sunday is the top usage day and Wednesday is the lowest usage day. This visualization could contradict the hypothesis that most riders are commuting to and from work and could indicate more social activities drive usage. More analysis would be needed. Also, the fact that casual users (non-members) have rides two times that of member ride times could indicate the annual membership of $219.99 (or $18.33/month) for unlimited 45-minute rides is too high when compared to a $19 day pass or $4.79 for a single ride. Citi Bike may want to change its marketing tactic to the riders who buy at least one day pass or four single ride passes each month.