



Divvy City

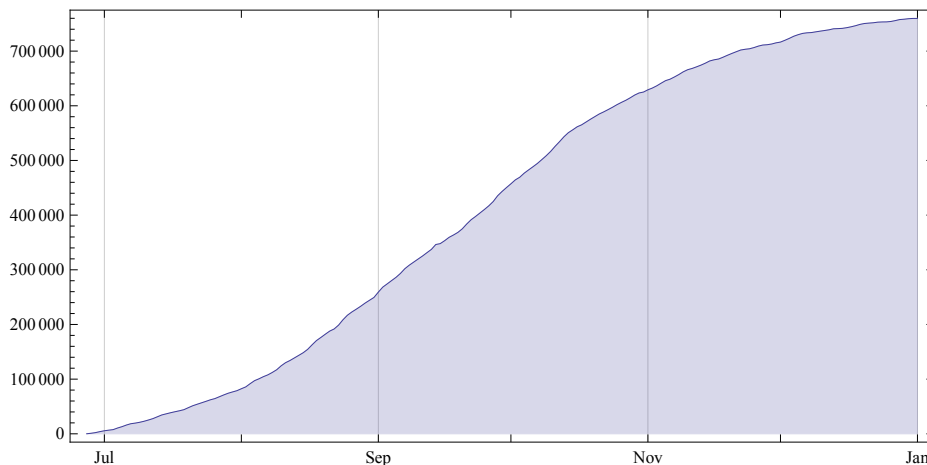
Supplement to Infographic

Space Programs by Taylor Blackburn + Laura Ettedgui

Overview

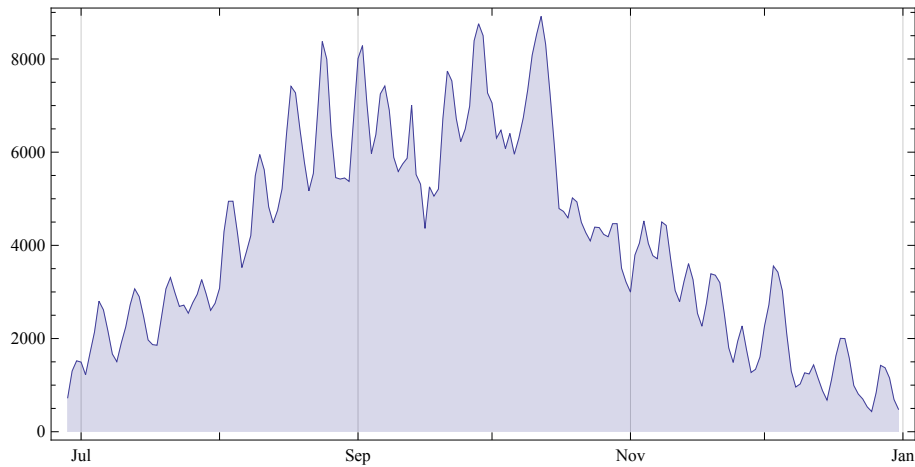
Basics

Let's start by looking at how Divvy picked up momentum after launch. Here's a running tally of all trips over time.

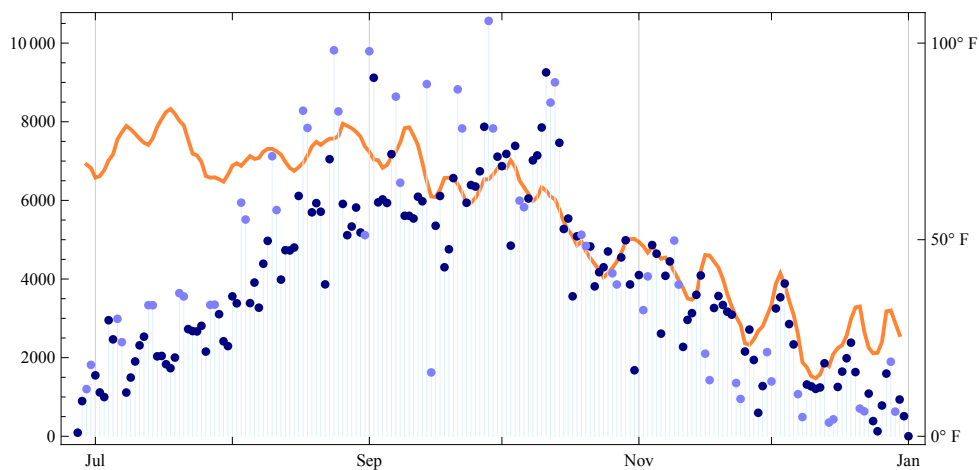


Things got rolling pretty quickly, and it looks like traffic was relatively stable from mid-August through mid-October. Notice how the curve gradually gets flatter starting around November.

We can also tally how many trips were taken each day. Here's the 3-day moving average of daily traffic. Using a moving average smooths the line and make it more readable.

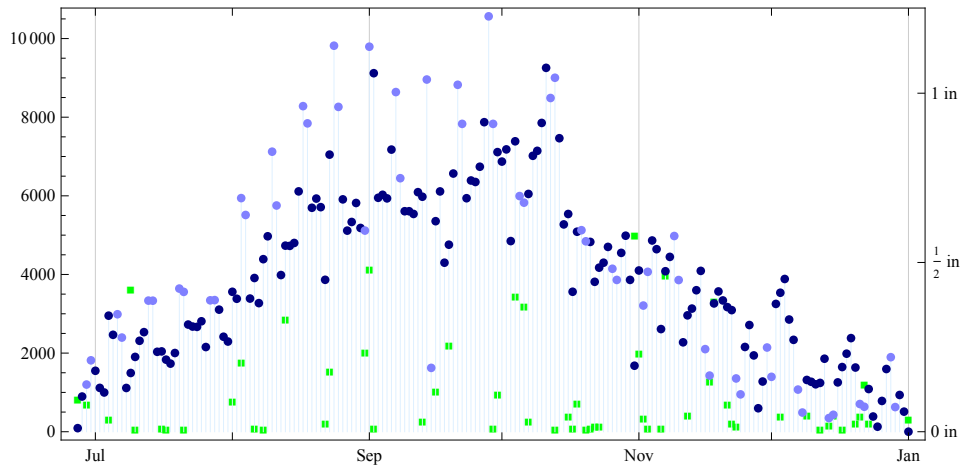


The range of dates in the data is actually short enough to plot daily traffic as individual points. This means we can visually compare the traffic each day to other data, such as the weather. In the plot below, the lighter points are weekends, and the orange line is the average temperature.

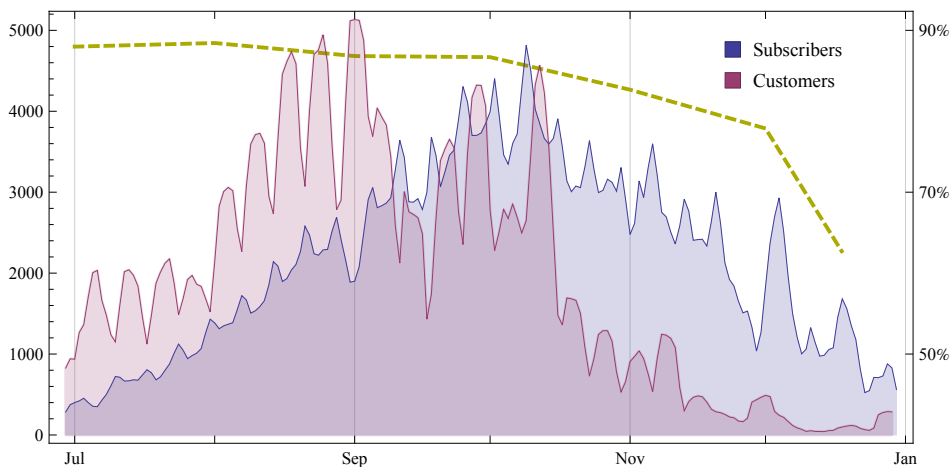


The relationship between traffic and temperature becomes quite clear as it starts to get colder in October. However, we won't be able to precisely analyze how the temperature affects traffic until we have at least a year of data.

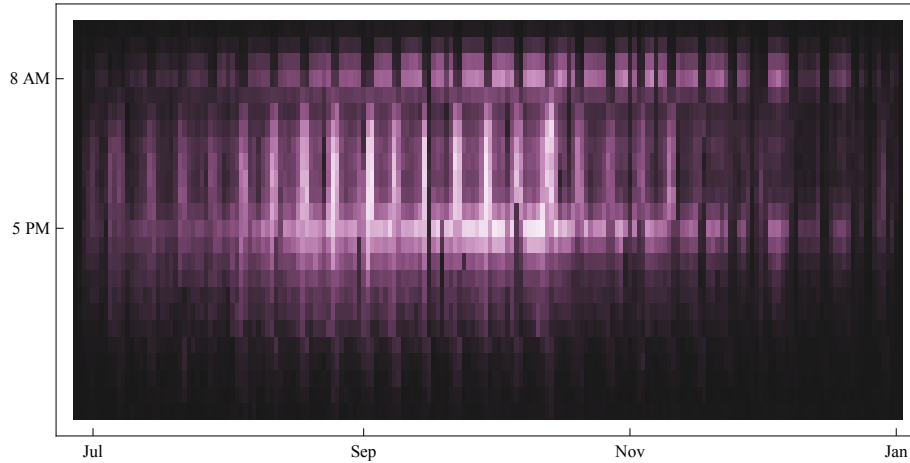
On the other hand, we didn't notice much of a pattern between traffic and precipitation, shown below with green squares.



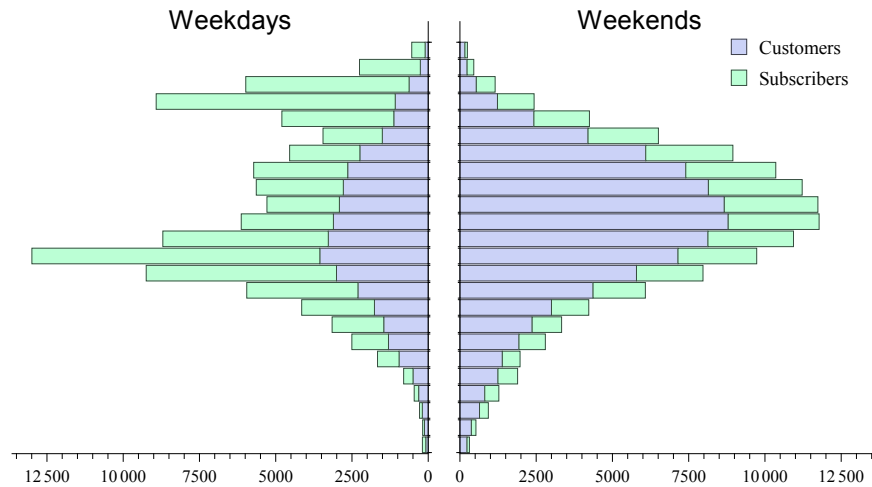
The relative drop in weekend popularity probably relates to commuting patterns. It seems that regular riders ("subscribers") are more tolerant of the cold weather. This plot breaks down traffic by "subscribers" and single-day "customers." The dashed yellow line, which shows Chicago's hotel occupancy, suggests that the sudden drop in "customer" traffic isn't as simple as fewer people visiting the city.



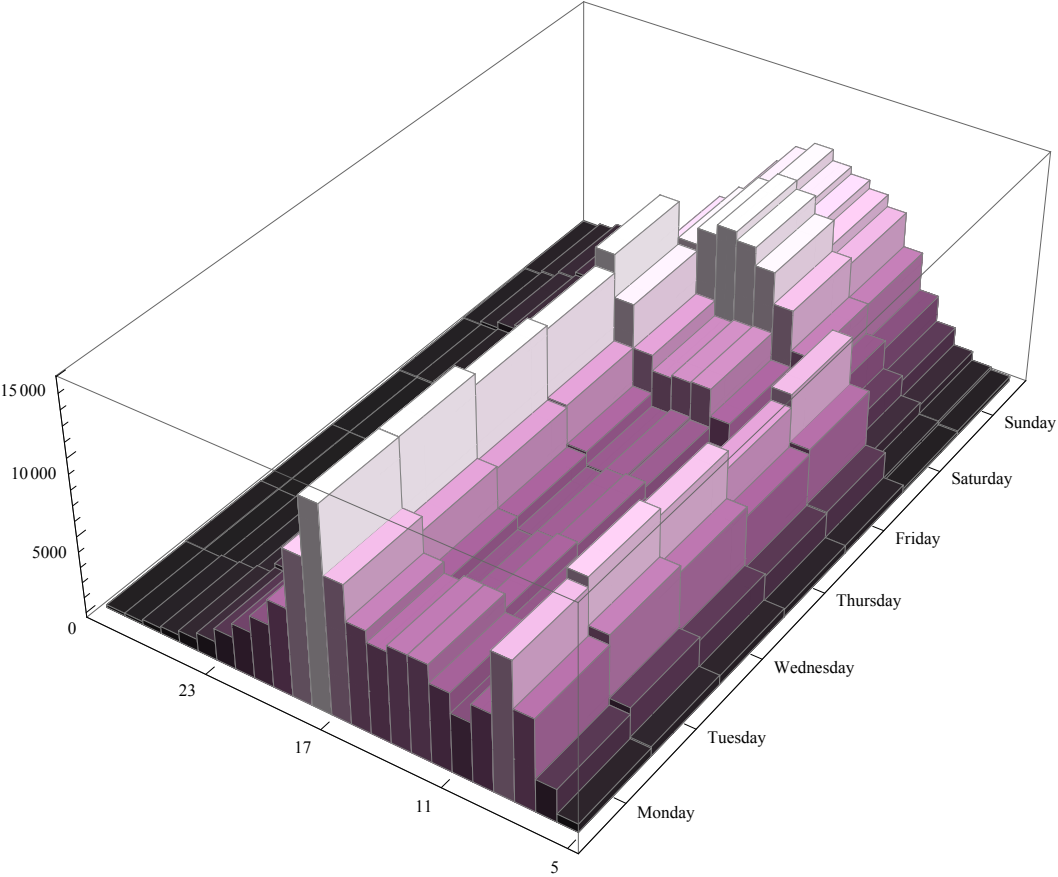
Another visualization lends support support to the hypothesis that decreased weekend traffic reflects declining "customer" usage. In this density plot, the intensity of the color indicates more traffic. The horizontal patterns in the morning and afternoon suggest commuting, and the strong vertical lines correspond to weekends. Notice that the commuter traffic doesn't fade as much as weekend traffic as winter sets in.



In fact, we can see that weekend traffic is dominated by “customers.” The chart below depicts all trips broken down by day of week, time of day, and “subscribers” vs. “customers.” The vertical axis is the same as the density plot above, meaning the top bar represents traffic between 5 and 6 AM.

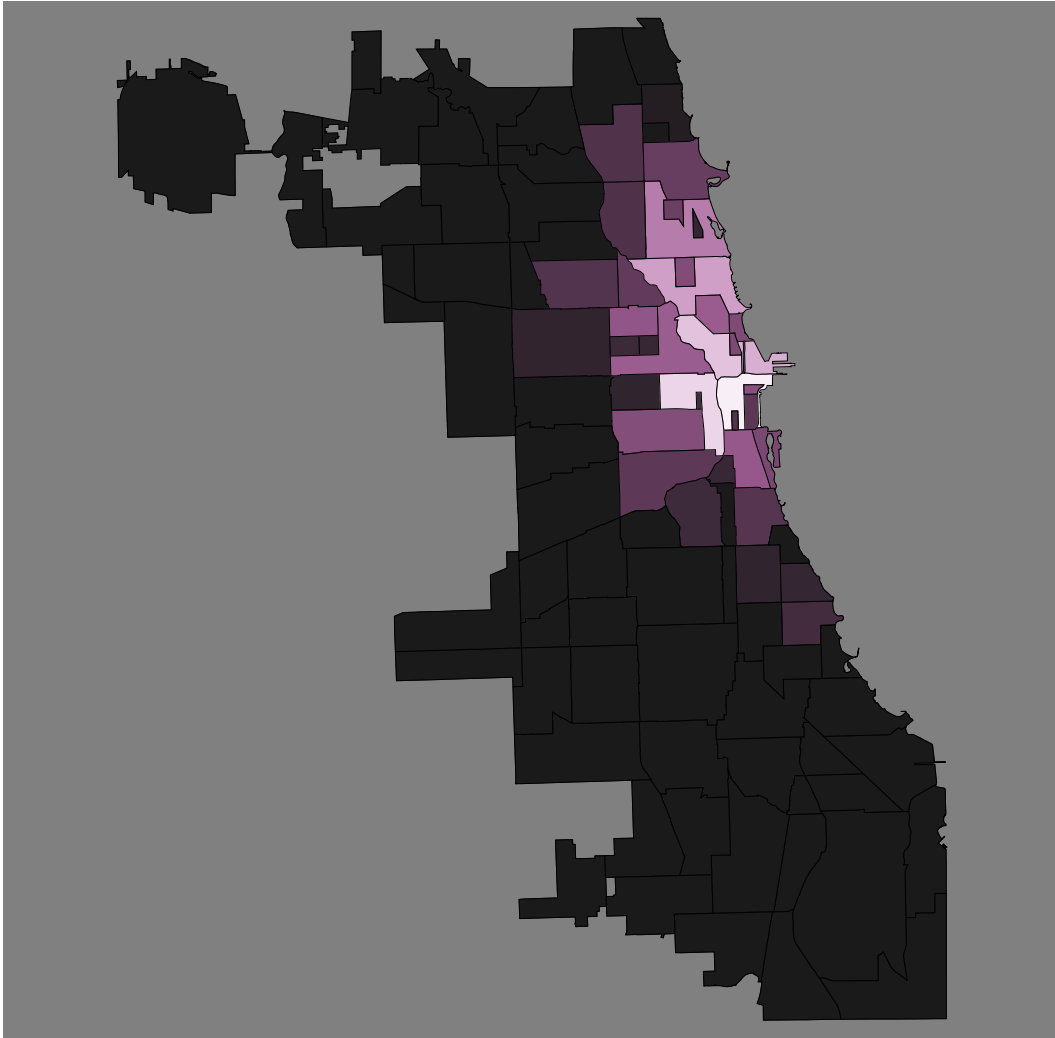


Lastly, let’s visualize a typical week’s traffic in 3D. This chart shows the same type of information as the density plot above, except that it depicts the average weekly traffic instead of showing every day individually. Notice how there appears to be a bit of spillover traffic from the weekend on Mondays and Fridays.

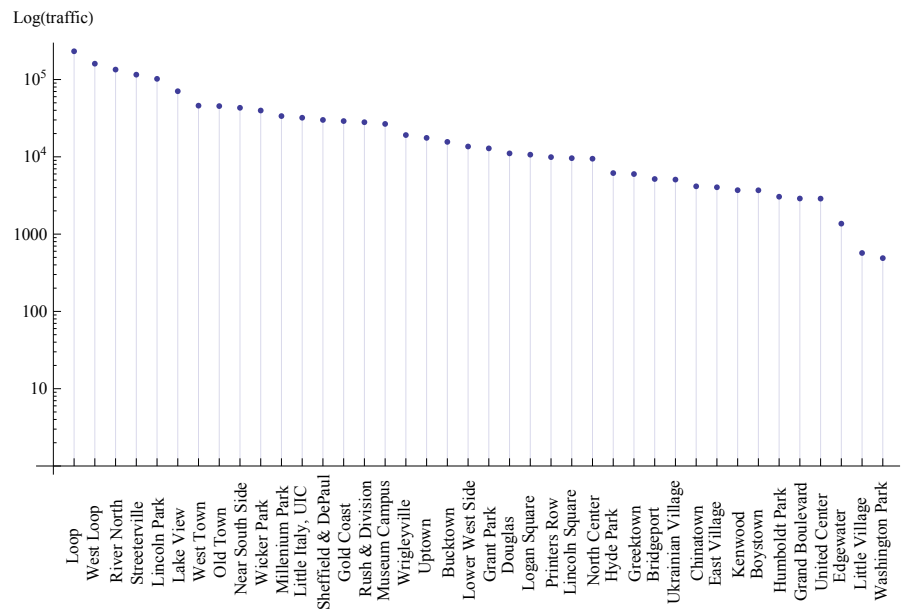


Neighborhoods

Unsurprisingly, the busiest neighborhoods are downtown.



A handful of neighborhoods are in fact so busy that they can only be represented on a log scale.



Stations

Total bikes “rebalanced” by approximate time of day. The time of day was estimated by taking the midpoint between the bike’s arrival at the old location and its first departure from the new location.

