



Best Maintenance Times for MTA Stations

By Erik Paulson

What is the purpose of optimizing maintenance dates?

MTA is a public benefit corporation that is designed to serve the general public of the New York metropolitan area. With the commuters being the clients of this corporation, I believe it is an ideal strategy to keep customer satisfaction high by strategically provide general and specialized maintenance on specific dates so that station impact is minimized.



Different MTA Stations, Same Idea

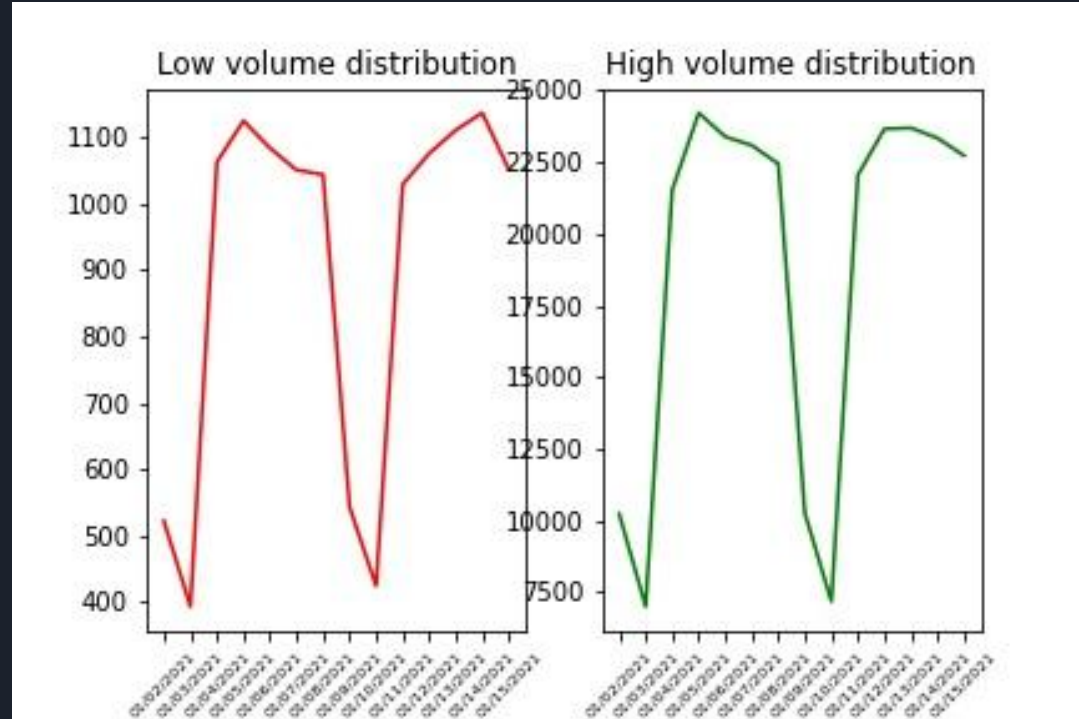
88 ST Station

vs

Grand Central Station

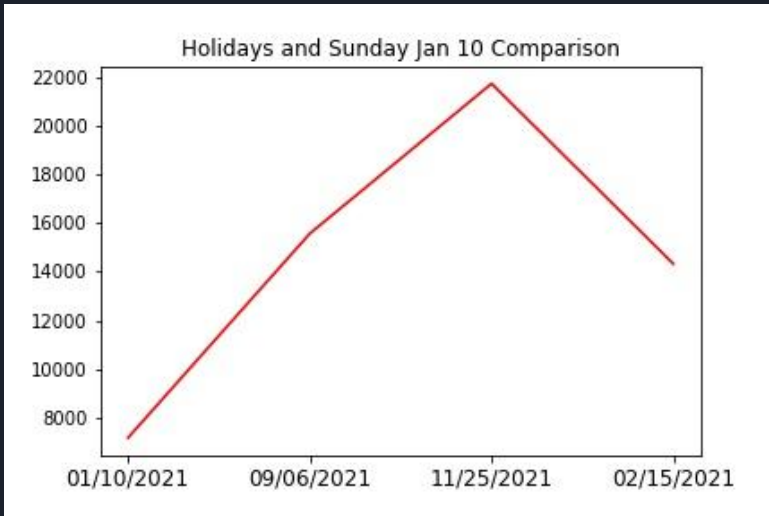
While some MTA stations have vastly different capacities, they seem to have a similar type of daily distribution of riders. During the week, there are a large number of commuters and this number drops sharply when looking at weekend traffic.

Ex: On these graphs Tuesdays have approx 3-3.5x the amount of commuters than Sundays.



Is there any benefit to doing this on a holiday?

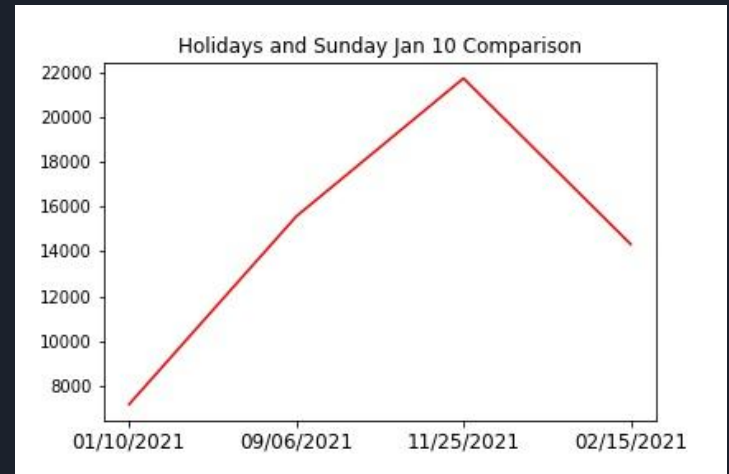
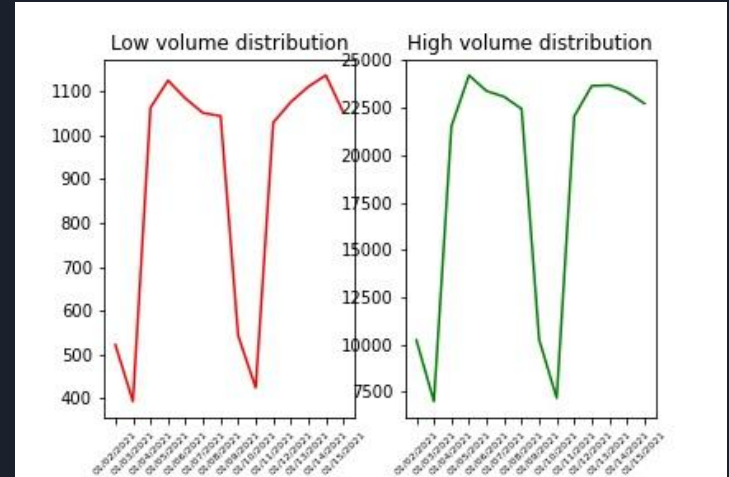
From the last slide, we saw that there are definitely some days (Sundays) that are more optimal for maintenance because of the approximately 3 times less traffic. However, some days are federal paid holidays so maybe these days have less commuters than even a Sunday.



Unfortunately, this is not the case. Even for federally paid holidays, such as Thanksgiving, Washington's Birthday, and Labor day the amount of travellers is significantly higher than our chosen Sunday.

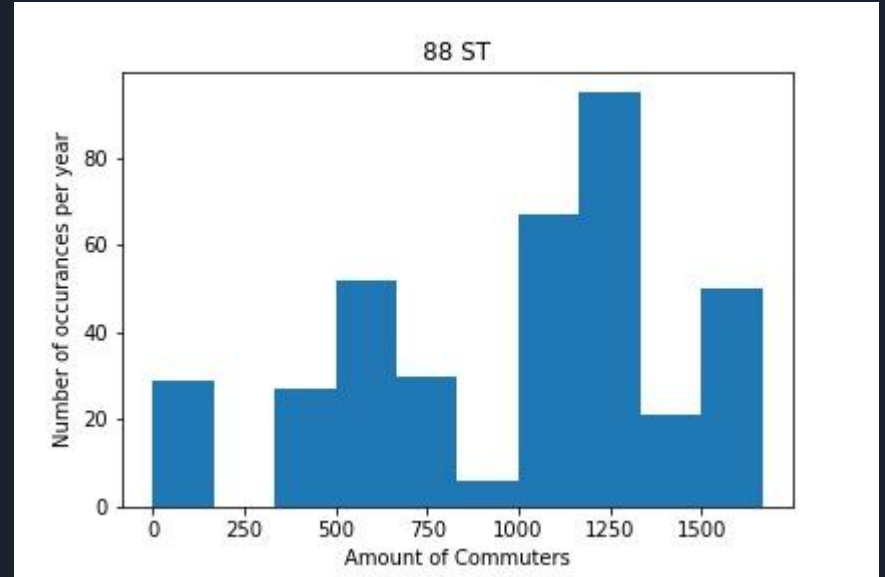
Holiday potential (cont)

However, this does not completely rule out the idea of utilizing these dates to perform maintenance. All the MTA work cannot be completed on one single day of the week, utilizing holidays to try and catch up on the work could be a good idea. Comparing the green Grand Central graph to the holidays Grand Central graph shows that the station serves fewer commuters on holidays except for Thanksgiving.



Number of Days for Ideal Maintenance

This histogram shows that there are quite a few chances to perform maintenance with a minimum number of commuters. Around 30 days per year will have a minimum number of commuters at the 88 ST station. These days should be dedicated to performing the most intense or tedious maintenance since there will be a fewer number of people and trains in motion.





More reasons to choose dates with low commuter numbers

One additional reason this data on commuter traffic is important is because of not just maintenance on the turnstile level, but on the entire subway system level. On June 27, 2017 there was an accident on the track caused by hasty maintenance and a large piece of steel track being overlooked. This single train was carrying hundreds of riders whose experiences ranged from “injured” to “terrified”. With incidents like these costing the city money and causing pain and suffering to riders who are injured or unable to do their job because they are trapped on the subway, this is an important aspect to consider for the MTA. By choosing a date with less riders and less trains being sent out, maintenance workers can be given more time to do their work and hopefully mistakes and accidents like this can be prevented.

Source:
<https://www.nytimes.com/2017/12/20/nyregion/system-failure-new-york-subway-maintenance-misery.html>