Cliff Bar NYC Subway Sampling Opportunity Analysis

Presented April 20, 2022 | Jenni Hawk

Introduction

Cliff Bar Sampling Initiative

Fuel Commuters

With the push in NYC to physically go back to work, Cliff Bar wants to be the top-of-mind brand in NYC associated with giving people the energy they need to get back to normal.

Product sampling has been planned:

- Street teams will be deployed at MTA Stations
- Cliff Bar samples will be distributed with a coupon to be used at Duane Reade

Key Questions: Where + When

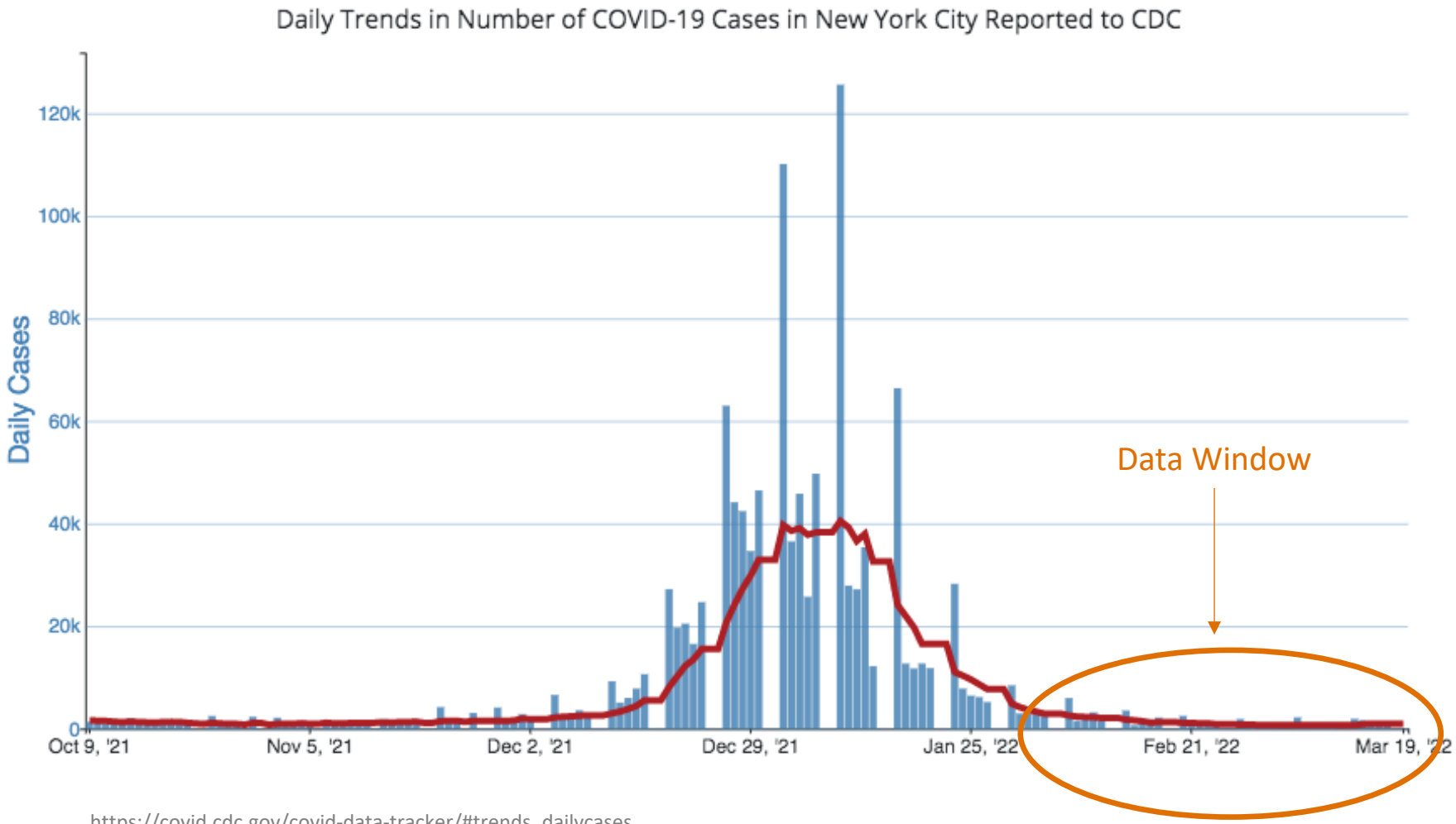
- What stations have the most traffic?
- On what days are most people using MTA?
- Where do Duane Reade locations fall within top MTA stations?
  - Are they within walking distance?
- How does the reporting period compare against a pre-Covid timeframe?

Getting to the answers

- What timeframe of data to analyze?
- What types of data to analyze?
- What tools to use?

Analysis Window

When Omicron was at low levels 1/29/22 – 3/19/22



https://covid.cdc.gov/covid-data-tracker/#trends_dailycases

Data & Tools

MTA + Duane Reade + CDC

NYC MTA turnstile data

NYC MTA lat / long

Duane Reade location data

CDC covid data tracker

NYC Covid Timeline

Python Libraries

Pandas:

- Connect to local database via SQLAlchemy
- Data manipulation, time series / date functionality

Matplotlib:

- Data visualization

Results

Street Teams Where + When?

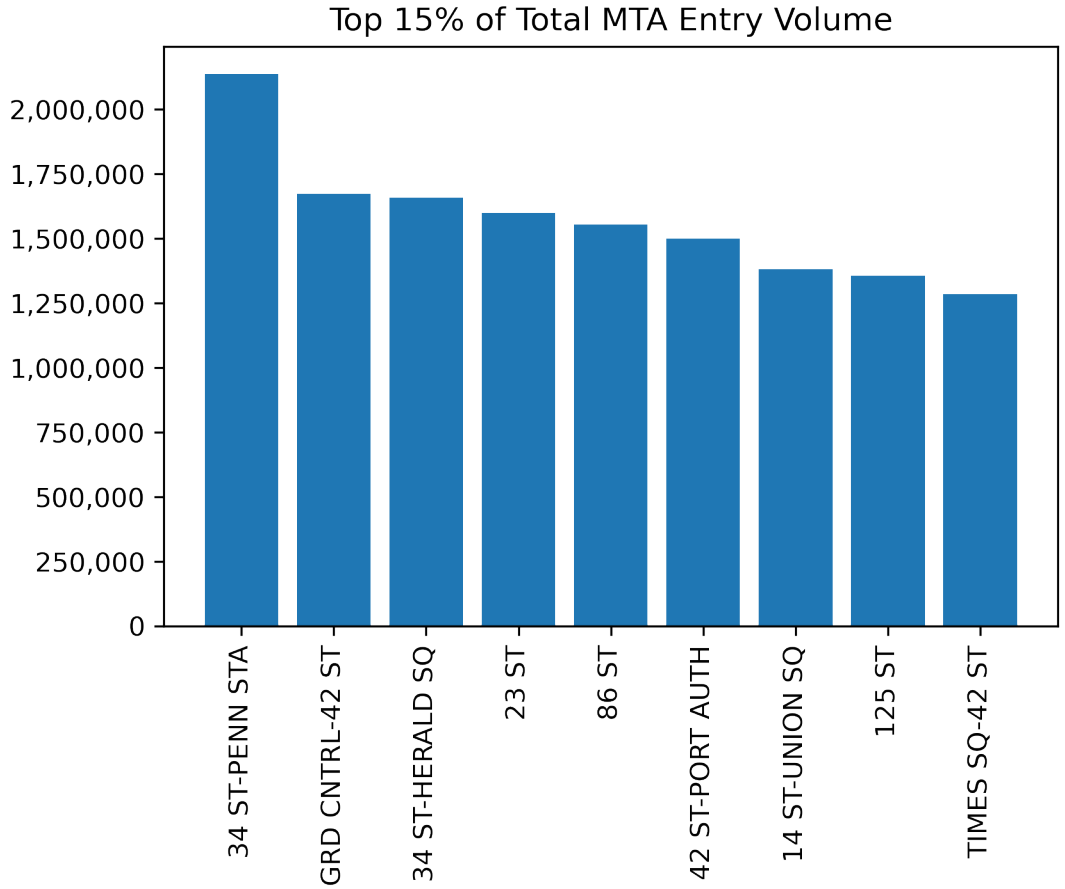
Stations With Most Volume

Nine stations represent top 15% of total MTA entry volume

- **15.4MM total entries** for reporting period 1/29/22 – 3/19/22
- 34 ST - Penn Station leads the pack at over 2MM entries
- Remaining stations have 1.67MM – 1.3MM entries

What this means for the business

In an emerging post pandemic NYC ridership numbers are at a substantial volume over the reporting period. To get the most Cliff Bars + coupons in hand focus sampling teams on these top volume stations



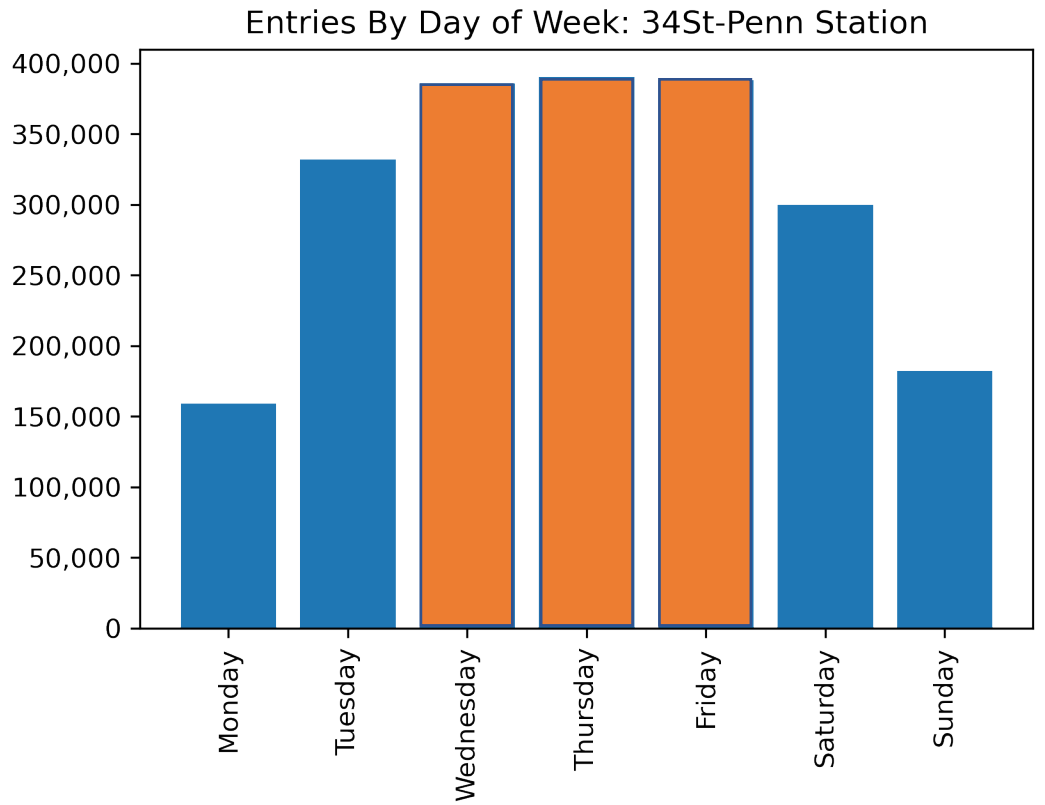
Heaviest Commuting Days

Heaviest commuting Wednesday - Friday

- When looking at 34 St – Penn Station we can see that most people are commuting Wed - Fri

What this means for the business

- Deploy sampling street teams Wed– Fri to intercept the heaviest traffic days



MTA & Duane Reade

Top MTA stations mapped to closest Duane Reade locations

Top MTA Location Duane Reade Location

https://www.google.com/maps/d/u/0/edit?mid=18V1rFRiiw8iK2FmEu1C563NZjZophWfR&ll=40.77434120280356%2C-73.97572584&z=13

Duane Reade locations are within walking distance of top MTA locations

Examples:

- 42nd Port Auth: Duane Reade 600 ft
- 42nd Grand Central: Duane Reade 1000 ft

MTA locations are surrounded by Duane Reed locations

- 34 St Penn Station: 3 DR
- Grand Central 42nd: 3 DR
- 23rd St: 2 DR
- 86 St: 2
- 34 St Herald Square: 2 DR
- 42nd Port Auth: 2 DR
- 14 St Union Square: 2 DR
- 42 Times Square: 1 DR
- 125 St: 1DR

Google Maps plotted with MTA Longitude Latitude Data + Duane Reed Longitude Latitude Data

Interlude

Pre-Covid vs Post Covid

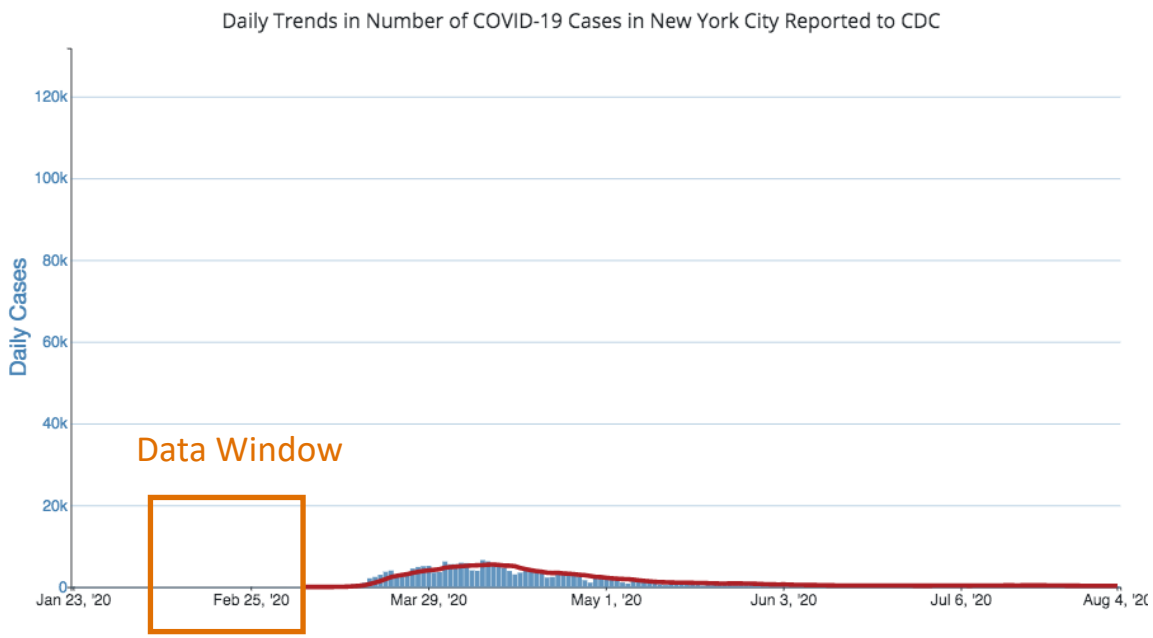
How do MTA numbers compare?

As a point of comparison, and to begin to get a glimpse into what the new normal is in NYC with regards to commuting, let’s look at some data.

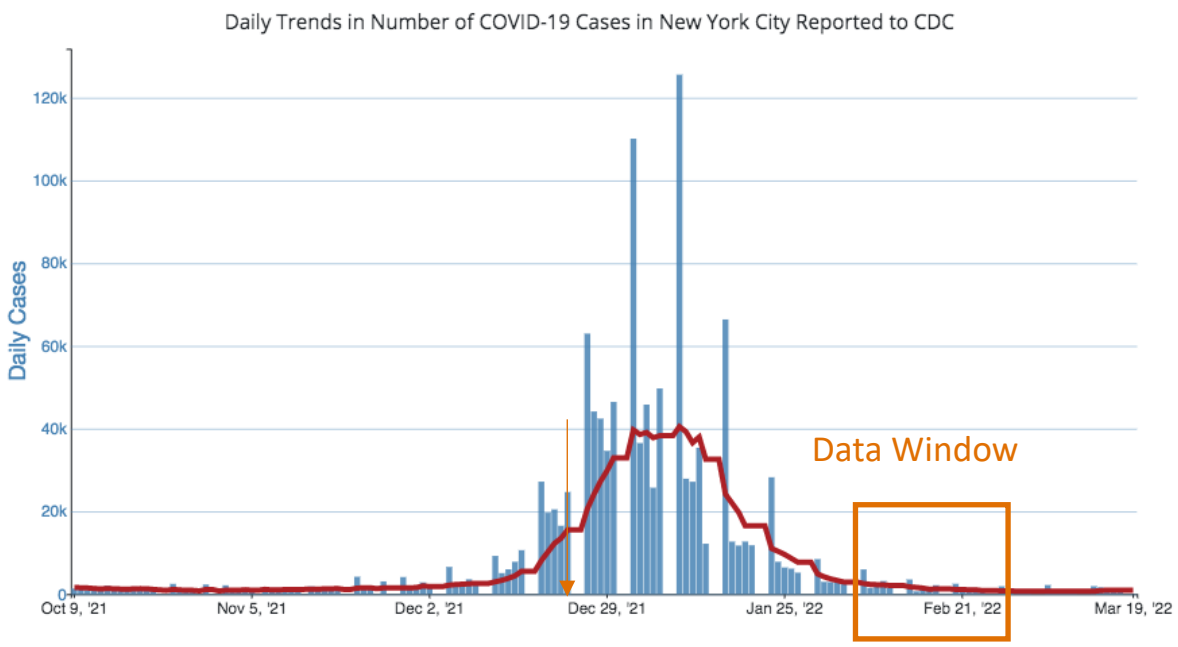
Pre-Covid vs emerging Post Covid

Analyze February 2020 compared to February 2022

February 2020 | No Covid



February 2022 | Low Covid



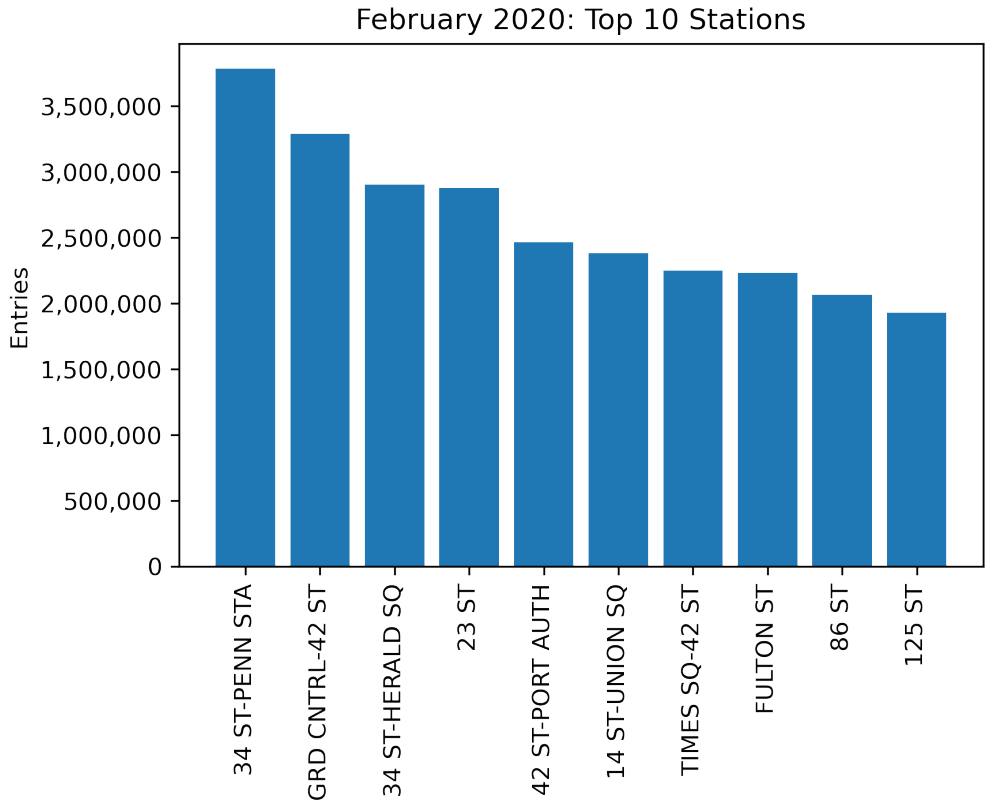
https://covid.cdc.gov/covid-data-tracker/#trends_dailycases

Pre-covid vs Post-covid

While there's a 66% decrease in entries Feb 2020 vs Feb 2022, ridership at top stations in 2022 has considerable volume

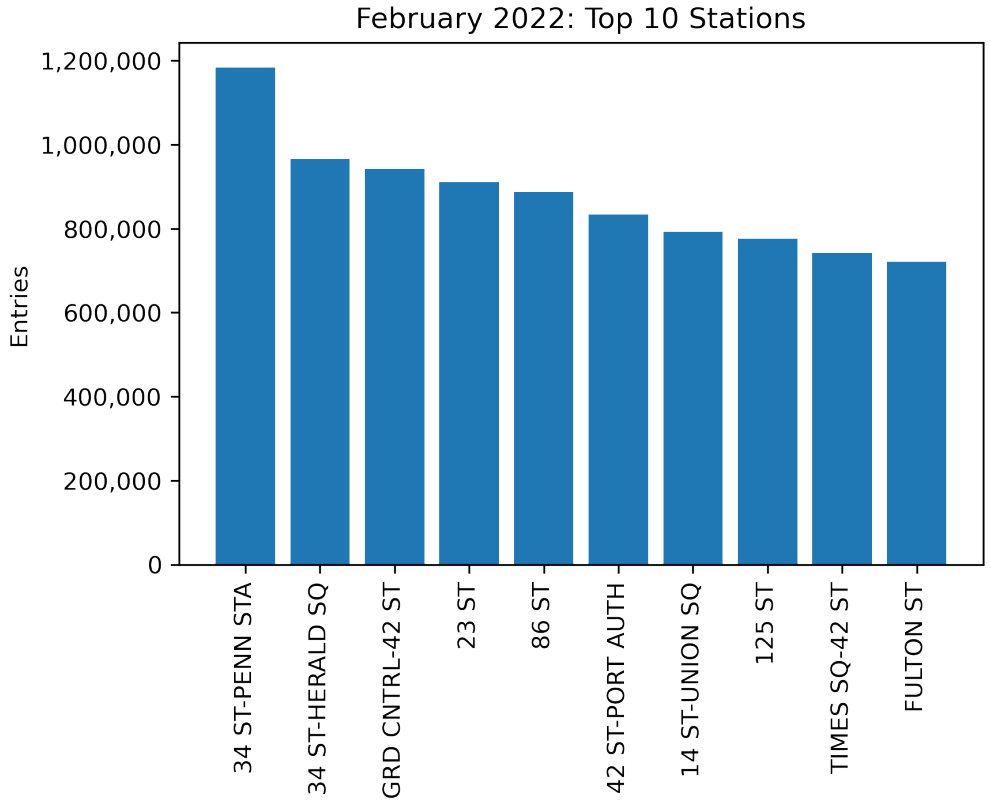
February 2020 | No Covid

26,167,699 TTL Entries



February 2022 | Low Covid

8,759,881 TTL Entries



Conclusions

Cliff Bar in Action

Substantial MTA ridership in an emerging post covid world

15.4MM total entries at top nine stations for reporting period 1/29/22 – 3/19/22

While numbers are down compared to a pre-covid world, this is signifcant volume for a sampling initiative

Nine stations represent top 15% of total MTA entry volume

Target top stations to distribute maximum samples / coupons:

Grand Central – 42nd	42 St Port Auth	Times Sq – 42nd
34 St – Penn Station	86 St	
34 St – Herald Square	14 St Union St	
23 St	125 St	

Duane Reade locations surround top MTA stations, and they're within walking distance

Examples: 42nd Port Auth has a Duane Reade within 600 ft and 42nd Grand Central has a Duane Reade within 1000 ft

Wednesday-Friday are heaviest commuter days

Deploy sampling teams on these days to intercept the most traffic

Future Work

Deeper Dive

Create a methodology to accurately gage commute times

Within the current MTA dataset, it's not feasible to accurately predict what time of day is most opportunistic for sampling teams to be deployed. Identify other research / datasets that can provide this direction.

Use GeoPandas to get a precise walking distance

If more precision is required to determine walking distance from MTA location to Duane Reade locations conduct further work via GeoPandas.

Currently Duane Reade locations are mapped to MTA locations based on zipcode, then plotted according to latitude/longitude of each location via Google Maps. A manual measuring tool in Google Maps, along with visual proximity is being used to give a read on walking distance.


CLIF BAR
NUTS & SEEDS
BLUEBERRY CRISP
CRUNCHY PEANUT BUTTER
CHOCOLATE BROWNIE
COOL MINT CHOCOLATE
PEANUT BUTTER BANANA
COCONUT CHOCOLATE CHIP
CHOCOLATE CHIP
PEANUT TOFFEE BUZZ
CHOCOLATE CHIP PEANUT CRUNCH
WHITE CHOCOLATE MACADAMIA NUT
OATMEAL RAISIN WALNUT

Discussion

Appendix

For Further Curiosity

Links to data sources
NYC Covid Timeline 2020

Data Sources

NYC MTA turnstile data http://web.mta.info/developers/turnstile.html

NYC MTA Lat / Long https://data.ny.gov/widgets/i9wp-a4ja

Duane Reed location data https://www.scrapehero.com/location-reports/Duane%20Reade%20Pharmacy-USA/

MTA / Duane Reade Location Map
https://www.google.com/maps/d/u/0/edit?mid=18V1rFRiiw8iK2FmEu1C563NZjZophWfR&ll=40.77434120280356%2C-73.97572584&z=13

CDC Covid Case Tracker https://covid.cdc.gov/covid-data-tracker/#trends_dailycases

CDC Covid Timeline https://www.cdc.gov/museum/timeline/covid19.html

NYC Covid Timeline 2020

Timeline: New York City Coronavirus

From the first reports in Janury 2020 of COVID-19 deaths in China, to the latest tally of cases and deaths in NYC as of April 6, 2021.

Search in table

January 11, 2020	China reports first COVID-19 death
January 21, 2020	First confirmed COVID-19 case in the U.S.
January 30, 2020	The W.H.O. declares a global health emergency
February 29, 2020	First reported COVID-19 death in the U.S.
March 1, 2020	**First COVID-19 case in New York State**
March 7, 2020	NY Governor Andrew Cuomo declares a state of emergency
March 8, 2020	NYC issues guidelines to avoid densely packed buses, subways, or trains
March 10, 2020	Governor Cuomo orders containment zone in New Rochelle from March 12 to 25
March 12, 2020	Events with more than 500 people must be cancelled or postponed
March 12, 2020	Broadway shuts down
March 13, 2020	President Trump declares a national emergency
March 14, 2020	**First two COVID-19 deaths in NYS**
March 15, 2020	C.D.C. recommendeds no gatherings of 50+ in the U.S.
March 16, 2020	**NYC public schools close**
March 17, 2020	**NYC bars and restaurants close, except for delivery**
March 22, 2020	**NYS on Pause Program begins, all non-essential workers must stay home**
March 27, 2020	President signs the CARES Act
March 27, 2020	U.S. reaches the most COVID-19 cases in the world
March 28, 2020	**Governor Cuomo halts all nonessential construction sites in NYS**
March 30, 2020	USNS Comfort arrives in NYC
March 31, 2020	NYC passes 1,000 COVID-19 deaths
April 6, 2020	Governor Cuomo extends NYS's stay-at-home order and school closures to April 29

https://www.investopedia.com/historical-timeline-of-covid-19-in-new-york-city-5071986