COVID19 IMPACTS ON TRANSPORTATION

Produced by the NYC Department of City Planning's Transportation Division

November 17, 2020





Introduction

- The NYC Department of City Planning's Transportation Division is compiling data to help understand the effects of COVID19 on the transportation network. This report and all prior reports beginning in April 2020 can be found at https://www1.nyc.gov/site/planning/planning-level/transportation/transportation-overview.page
- This week's report includes the following information:
 - 1. Executive Summary
 - 2. Citywide Trends
 - 3. MTA: Subway and Bus
 - 4. MTA: Metro North Railroad, Long Island Rail Road, Access-A-Ride
 - 5. Ferry
 - 6. Traffic
 - 7. Bicycles
 - 8. Timeline
- This report may serve to help in pandemic response and longer-term recovery. We are eager for feedback in how to make this more useful. Feel free to reach out to Laura Smith (lsmith@planning.nyc.gov) with questions or comments.



Executive Summary

- There have been minimal changes to ridership on subways and buses week over week. Mixed weather in early November likely contributed to some spikes and dips in ferry and Citi Bike ridership.
- The city's business districts in midtown and lower Manhattan, downtown Brooklyn, and Long Island City continue to see less than a quarter of their pre-Covid PM peak subway entries, indicating a very limited return to work in those areas.
- Year over year, the greatest ridership differences are currently seen in neighborhoods with the strongest likelihood of having telework-capable populations, and telework-capable jobs. Due to how MTA subway data is compiled, the end of daylight savings on November 1 has impacted our ability to compare current AM and PM peak subway ridership against April 2020.
- AM and PM peak hour ridership on the Staten Island Ferry continues to be earlier than during the same period in 2019.
- Total average weekday daytime inbound vehicles to Manhattan and the Manhattan central business district are comparable to pre-pandemic levels.
- Citi Bike ridership is highly weather dependent and has been declining since September. Saturday, November 7 saw more than 98,000 Citi Bike trips, the third highest ridership day in 2020, due in part to wonderful weather and activity associated with the announcement of election results.



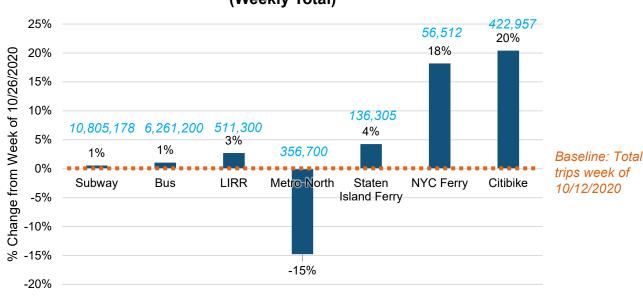
Citywide Trends



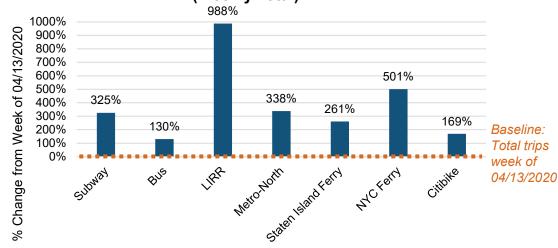
Citywide Trends

- Good weather contributed to ferry and Citi Bike ridership increases from two weeks ago; Metro-North ridership dropped by 15%, while other modes remained stable.
- Note: While bus ridership data had been estimated during the suspension of fare collection, bus
 ridership data from 10/1/20 onward is based on actual MetroCard and OMNY swipes and taps
 and an estimate of cash fares paid, which may account for some of the change observed this
 week over earlier in September.

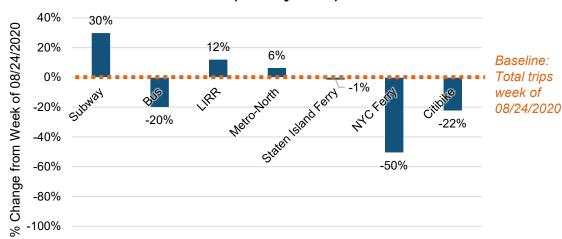
Week of 11/09/2020 Compared to Week of 10/26/2020 (Weekly Total)



Week of 11/09/2020 Compared to Week of 04/13/2020 (Weekly Total)



Week of 11/09/2020 Compared to Week of 08/24/2020 (Weekly Total)

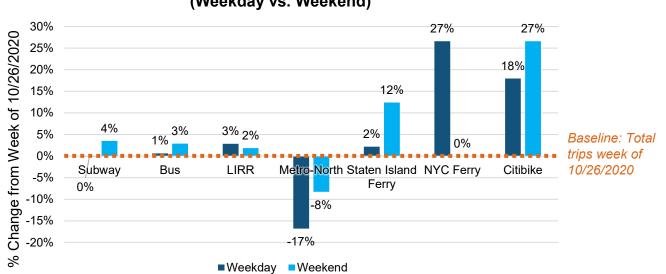




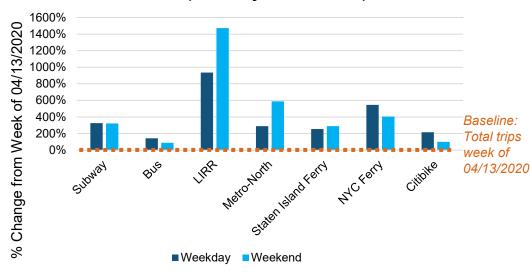
Citywide Trends: Weekday vs Weekend

- Gains in travel across different modes since two weeks ago skewed more towards weekend travel, except for NYC Ferry. This indicates a growing willingness to leave home, but perhaps not a return to places of work for many people who would typically be commuting.
- Note: While bus ridership data had been estimated during the suspension of fare collection, bus ridership data from 10/1/20 onward is based on actual MetroCard and OMNY swipes and taps and an estimate of cash fares paid and thus may be unreliable to compare against ridership counts from earlier this year.

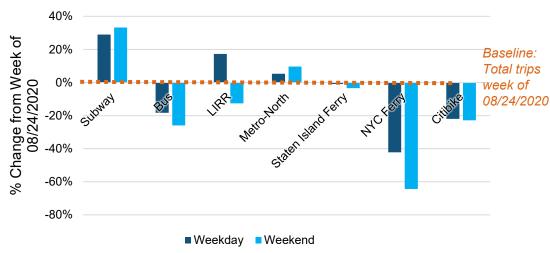
Week of 11/09/2020 Compared to Week of 10/26/2020 (Weekday vs. Weekend)



Week of 11/09/2020 Compared to Week of 04/13/2020 (Weekday vs. Weekend)



Week of 11/09/2020 Compared to Week of 08/24/2020 (Weekday vs. Weekend)



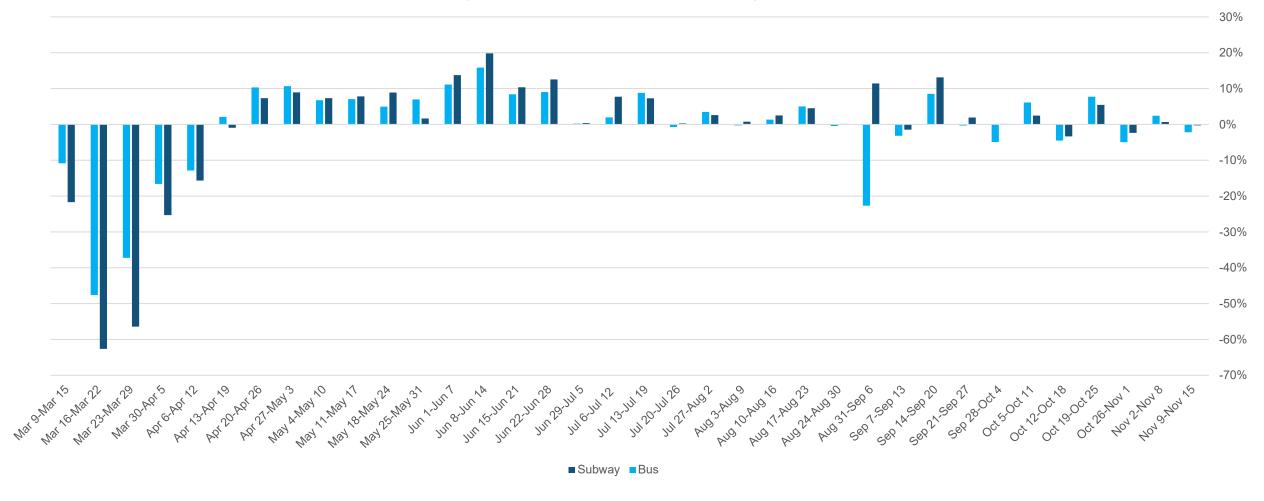


MTA data: **Subway and Bus**



MTA Subway & Bus System-wide Ridership Changes

Percent Change of Estimated* MTA Subway & Bus Weekly Ridership (March 1- November 15, 2020)



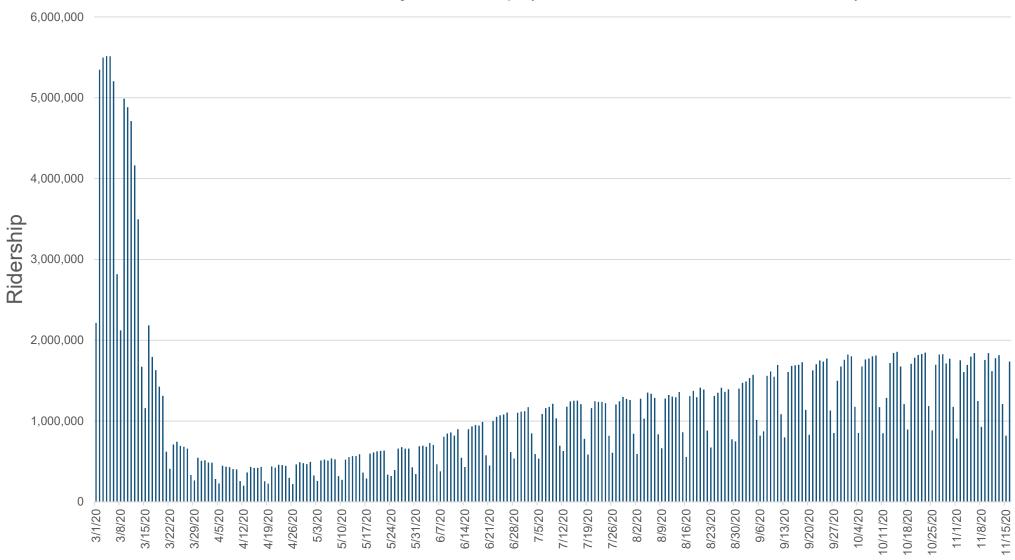
Ridership on subway and bus has remained stable week over week since mid-September.



MTA Subway System-wide Ridership Changes



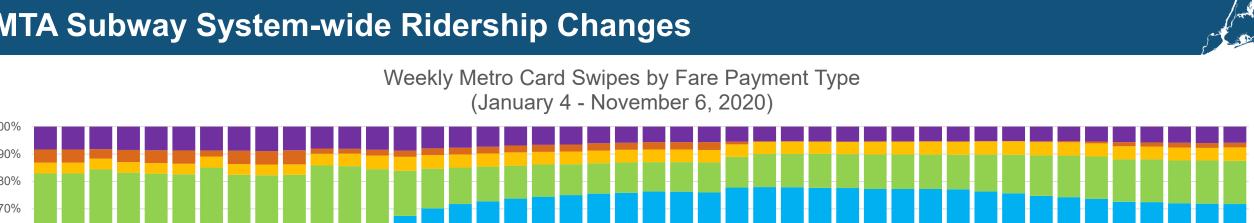


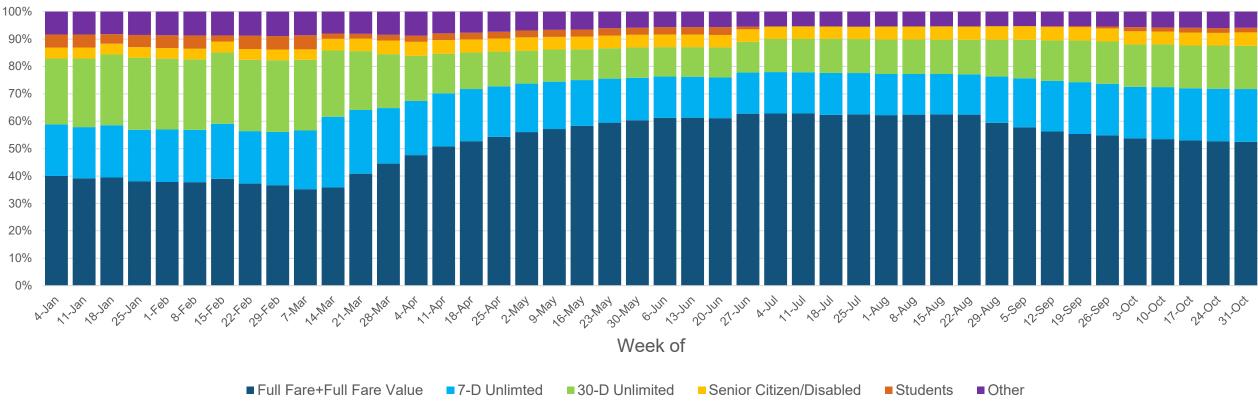


 Weekday subway ridership remained steady during the week of November 9 compared to the week of October 26, while the weekend ridership was up 4 percent.



MTA Subway System-wide Ridership Changes





- Starting in early April, riders increasingly used pay-per-ride cards.

Subway ridership by MetroCard type has fluctuated throughout the pandemic.

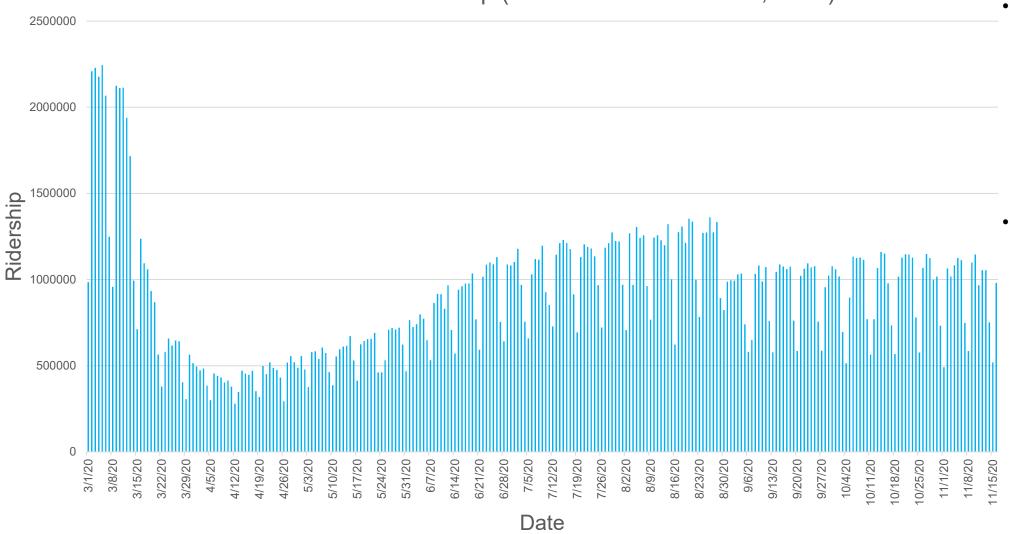
Over the past two months, the share of riders travelling on 7-day and 30-day unlimited cards has slowly increased, along with student cards.



MTA Bus System-wide Ridership Changes







- Weekday bus
 ridership was fairly
 steady during the
 week of November 9
 compared to the week
 of October 26, while
 the weekend ridership
 was up 4 percent.
- On October 1, the MTA changed how ridership is reported, noting on their website: "Bus ridership data from 10/1/20 onward is based on actual MetroCard and OMNY swipes and taps and an estimate of cash fares paid."

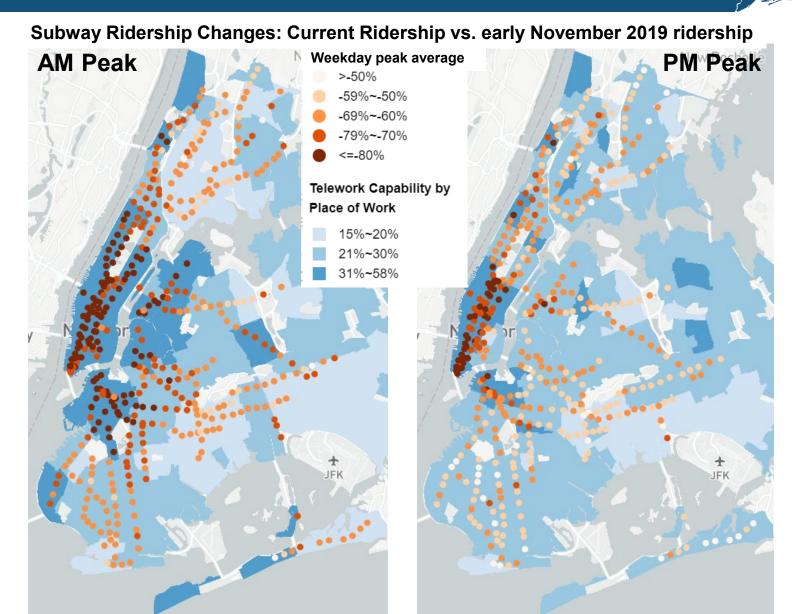


From the MTA: Current bus ridership figures are estimated from models that use MetroCard and OMNY swipes and taps and Automatic Passenger Counter data that is available on a portion of our bus fleet. These figures are indicative of ridership but not a precise count. Figures from recent days may be revised as reconciliation processes are carried out. Data sources: MTA (https://new.mta.info/coronavirus/ridership)

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Weekday AM and PM Peak Subway Turnstile Data and Telework Capability

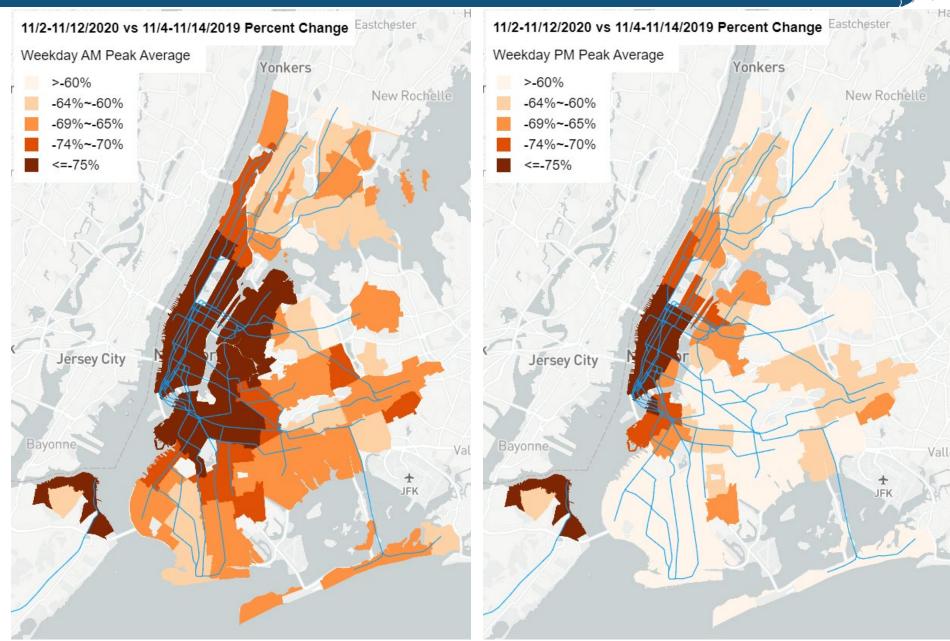
- A University of Chicago study estimated the "telework capability" of workers in different economic sectors.
- By mapping AM peak subway entries during early November 2020 and comparing them to entries over the same period in 2019, the highest rates of ridership decreases are seen in neighborhoods with the strongest likelihood of having teleworkcapable populations, including much of Manhattan, Downtown Brooklyn, Williamsburg, Long Island City, and Astoria.
- Mapping PM peak entries against neighborhoods with high concentrations of telework-capable jobs, we see similarly that ridership recovery has lagged in those areas where workers are more likely to be working from home rather than place of work.





Weekday AM and PM Peak Turnstile Data – Comparisons with Nov 2019

- While subway ridership has been increasing in recent months, AM and PM peak hour trips in remain substantially off from their volumes during the same weeks in 2019.
- The city's business districts in midtown and lower Manhattan, downtown Brooklyn, and Long Island City continue to see less than a quarter of their PM peak subway entries, indicating a very limited return to work in those areas.





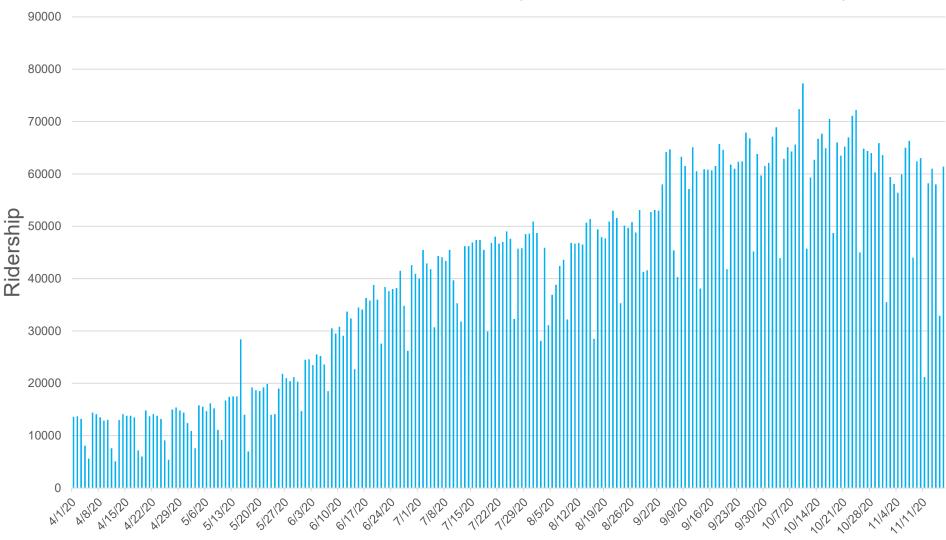
MTA data: Metro North Railroad, Long Island Rail Road, Access-A-Ride



Metro-North Railroad Ridership Changes







 Weekday and weekend Metro-North Railroad ridership for the week of November 9 was down 17 and 8 percent compared to the week of October 26.

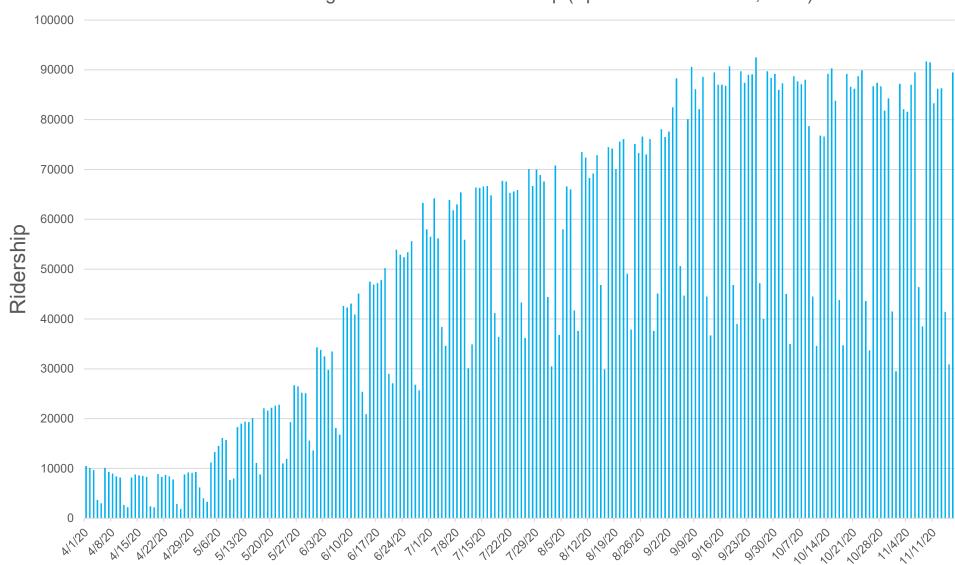


From the MTA: Metro-North ridership is estimated by a model using monthly, weekly, ten-trip, and daily ticket sales. Percent change is calculated based on 2019 monthly average weekday/Saturday/Sunday ridership figures. Data sources: MTA (https://new.mta.info/coronavirus/ridership)

Long Island Rail Road Ridership Changes







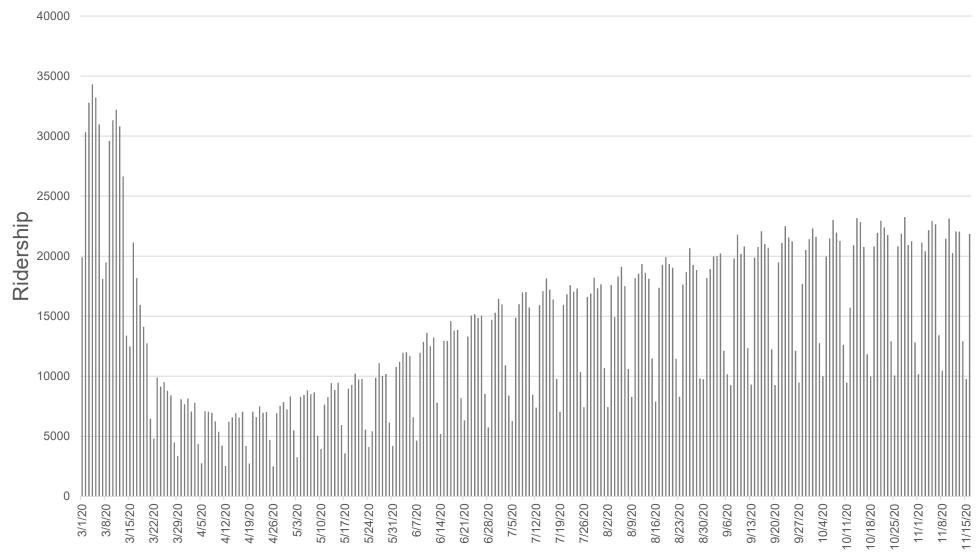
Weekday LIRR ridership for the week of November 9 was up 3 percent as the week of October 26, while weekend ridership was up 2 percent.



Access-A-Ride Scheduled Trip Changes



Estimated* MTA Access-A-Ride Scheduled Trips (March 1- November 16, 2020)



Weekday Access-A-Ride scheduled trips for the week of November 9 were nearly same as the week of October 26. while the weekend scheduled trips were down 1 percent.

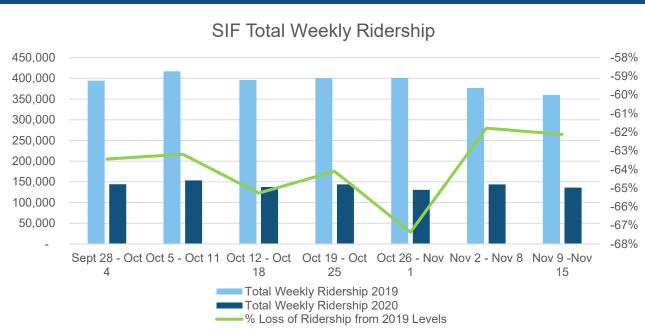


From the MTA: To provide timely updates, this data presents scheduled Access-A-Ride trips as an indicator of demand, rather than completed trips. The process to reflect completed trips, including adjusting for on-demand trips, cancelations, no shows, and on-street issues, would delay release of data for several weeks.. Data sources: MTA (https://new.mta.info/coronavirus/ridership)

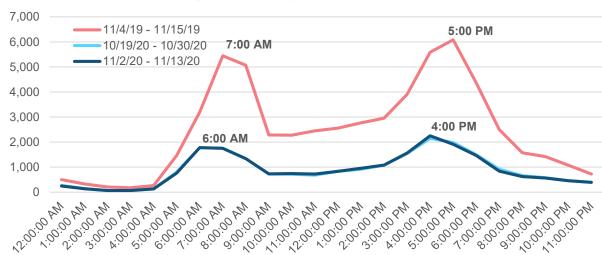
Ferry



The Staten Island Ferry and NYC Ferry

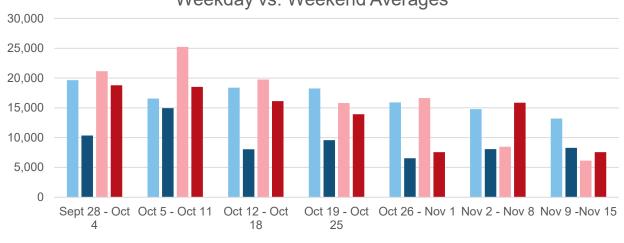


SIF Average Weekday Total Ridership Per Hour



- The two-week period of November 2 to November 15 saw a daily weekday average of about 21,300 Staten Island Ferry riders. During these two weeks, the SIF recovered an average of about 39 percent of its daily ridership, compared to 2019 levels.
- For the SIF, weekday peak hour ridership for the two-week period of November 2 to November 15 remained at 6:00 am for the morning and remained at 4:00 pm for the afternoon, compared to the previous two-week period.
- The two-week period of November 2 to November 15 saw NYC Ferry weekly ridership average 59 percent of its weekday ridership, and average of 155 percent of its weekend ridership, compared to 2019 levels. Comfortable weekend weather likely contributed to high weekend ridership.





■ Average Weekday Ridership 2019 ■ Average Weekday Ridership 2020

■ Average Weekend Ridership 2019 ■ Average Weekend Ridership 2020 November 17, 2020



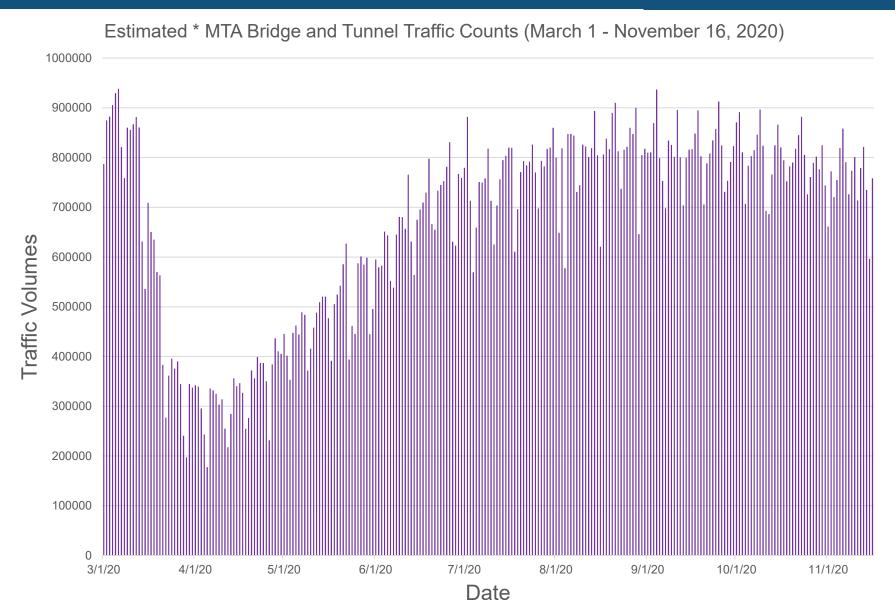
Data sources: NYCDOT: NYCEDC

Traffic



MTA Bridge and Tunnel Traffic Volumes





 Weekday traffic counts on MTA bridges and tunnels during the week of November 9 were down 2 percent compared to the week of October 26. Weekend traffic counts were down 5 percent.

MTA crossings include:

- Bridges: Robert F. Kennedy, Throgs Neck, Verrazzano Narrows, Bronx-Whitestone, Henry Hudson, Marine
- Parkway-Gil Hodges Memorial, and Cross Bay Veterans Memorial bridges.
- Tunnels: the Hugh L. Carey Tunnel and the Queens Midtown Tunnel.

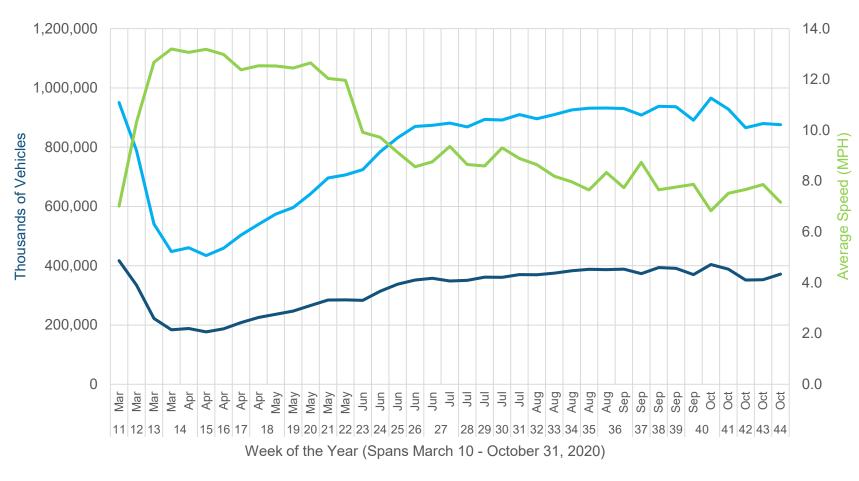




Manhattan Inbound Traffic



Total average vehicles entering Manhattan CBD and Manhattan via river crossings and average weekday daytime travel speeds in Midtown



- Total average weekday daytime inbound vehicles to Manhattan and the Manhattan central business district are comparable to prepandemic levels.
- After peaking in early April at about 13 mph, average Midtown Manhattan speeds dropped sharply in early June and have held at about 8 mph in recent weeks.

—CBD Inbound Traffic

—Manhattan Inbound Traffic

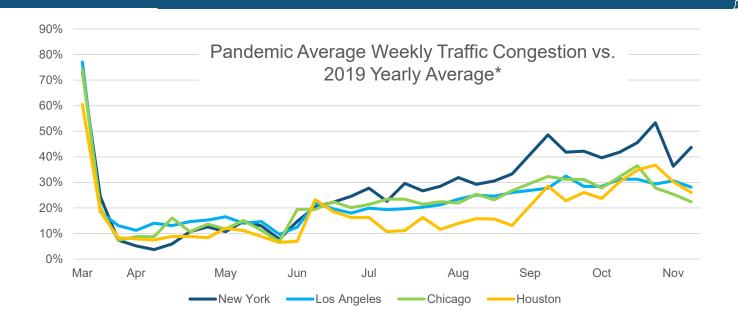
Midtown Speed

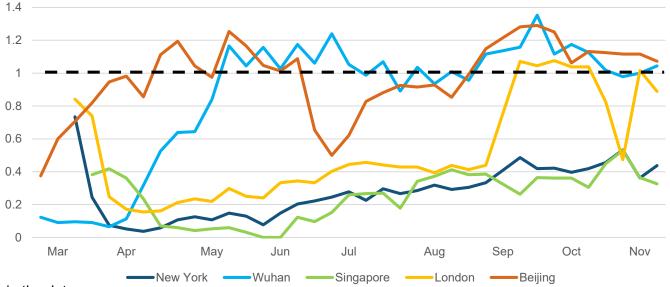
Source: NYCDOT, providing data from NYCTLC, Port Authority, Triborough Bridge and Tunnel Authority



Traffic Congestion

- These charts show average citywide congestion during the morning peak at 7am or 8am depending on the city.
- Congestion is a measure of the average amount of additional travel time needed to get to a destination anywhere in a city compared to free flow conditions.
 Zero percent represents free flow speeds; 100 percent represents 2019 yearly average congestion for each city.
- After a significant initial decline in congestion in March, congestion in NYC has been slowly increasing since June.
- Internationally, Beijing, Wuhan and London are currently seeing average congestion levels.







Some weeks contain less than five days due to holidays and gaps in the data.

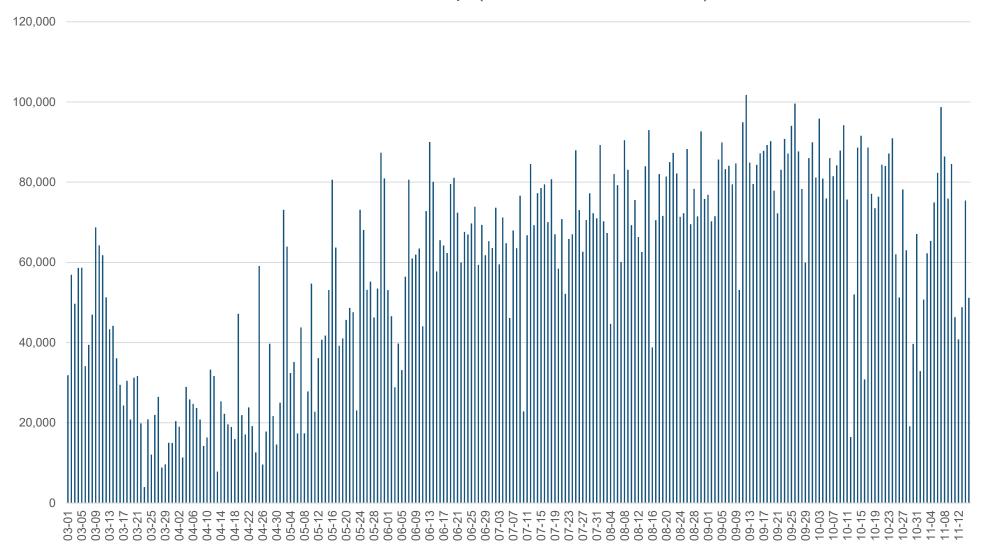
Bicycles



Citi Bike Ridership Changes

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Citi Bike Ridership (Mar 1- Nov 15, 2020)



- Citi Bike ridership was trending up between early March 2020 and June, and ridership is highly correlated with weather. Ridership has been stable in recent months.
- Saturday, November 7 saw a spike in ridership – attributed to wonderful weather and activity associated with the announcement of election results.
- November 7 saw more than 98,000 Citi Bike trips, the third highest ridership day in 2020.



Data sources: DOT Citi Bike Data

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Precipitation Impact on Citi Bike Trips

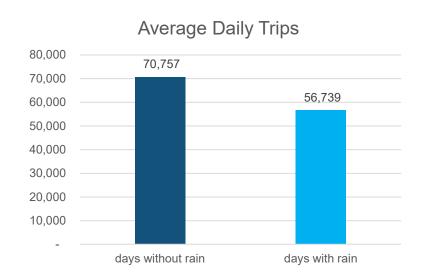
Weather plays a big role in bike ridership, and cold wet winter weather is likely to reduce ridership.

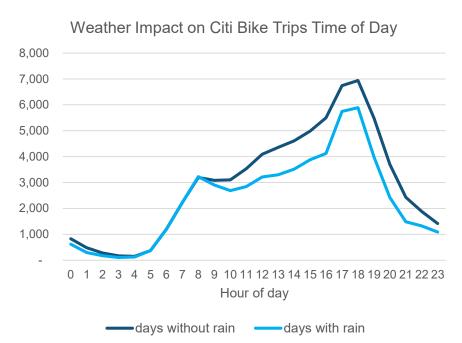
Here we look at the impact that rain alone has on ridership:

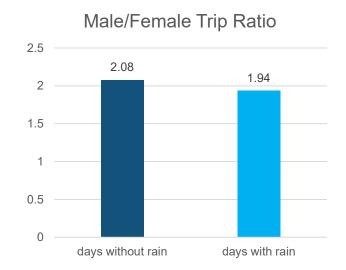
- Rainy days see an average of 20 percent fewer trips than days without rain.
- The male:female trip ratio is about 2:1 on days without rain. That gap narrows slightly on rainy days.
- The early morning hours show the least variation in ridership; the gap between total trips taken on rainy vs non rainy days widens as the morning progresses into the afternoon.
- Trips taken on rainy days tend to be shorter than trips taken on days without rain.

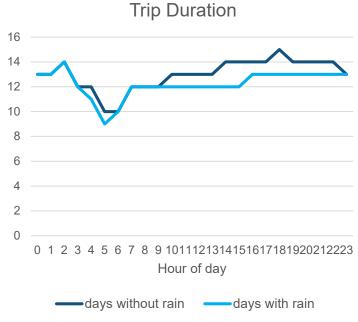
Note: In order to minimize the influence of temperature impact and the unstable trip trend due to COVID-19, the data used here is from 2020-07-01 to 2020-09-30.

Rain Day: Precipitation is more than 10 mm, according to weather station location in Central Park.











Timeline



New York COVID19 Pandemic Timeline: First Case to End of PAUSE

- March 1st, 2020: First confirmed case in New York (https://www.wsj.com/articles/first-case-of-coronavirus-confirmed-in-new-york-state-11583111692)
- March 7th, 2020: Governor Cuomo declares state of emergency (https://www.governor.ny.gov/news/novel-coronavirus-briefing-governor-cuomo-declares-state-emergency-contain-spread-virus)
- March 12th, 2020: Governor Cuomo announces restrictions on mass gatherings, directing events with more than 500 people to be cancelled or postponed and any gathering with less than 500 people in attendance to cut capacity by 50 percent. https://www.governor.ny.gov/news/during-novel-coronavirus-briefing-governor-cuomo-announces-new-mass-gatherings-regulations
- March 15th, 2020: NYC school closures announced. (https://www1.nyc.gov/office-of-the-mayor/news/151-20/new-york-city-close-all-school-buildings-transition-remote-learning) Mayor de Blasio announces the closure of schools, bars, and restaurants (except takeout/delivery) effective the morning of the 17th (https://www1.nyc.gov/office-of-the-mayor/news/152-20/statement-mayor-de-blasiobars-restaurants-entertainment-venues)
- March 18th: Governor Cuomo announces that 50% of non-essential employees must work from home (https://www.governor.nv.gov/news/no-2026-continuing-temporary-suspension-and-modificationlaws-relating-disaster-emergency)
- March 20th: Governor Cuomo announces statewide stay at home rules, effective the evening of the 22nd. 100% of non-essential workers must stay home. (https://www.governor.ny.gov/news/governorcuomo-issues-guidance-essential-services-under-new-york-state-pause-executive-order), travel on transit only when necessary
- March 24th: MTA announces service reduction to Essential Service plan (http://www.mta.info/press-release/mta-headquarters/mta-implements-%E2%80%9Cnv-essential-service-plan%E2%80%9D-movehealthcare-workers)
- March 27th: The Governor halts non-essential construction (https://thecity.nyc/2020/03/cuomo-calls-off-non-essential-construction-statewide.html)
- May 1st: Mayor de Blasio announces first seven miles of streets in Open Streets NYC program. (https://www1.nyc.gov/office-of-the-mayor/news/306-20/open-streets-mayor-de-blasio-speaker-johnsonname-first-streets-be-used-social)
- May 6th: Governor Cuomo enacts nightly 1am-5am subway shutdowns: (http://www.mta.info/press-release/mta-headquarters/mta-announces-overnight-closure-subway-deep-cleaning-launches-)
- May 22nd: Mayor de Blasio announces 43 miles of open streets, the most in the nation, with the City to eventually reach 100 miles. (https://www1.nyc.gov/office-of-the-mayor/news/370-20/mayor-deblasio-surpasses-open-streets-target-13-more-miles-streets-be-opened-by)
- May 29th: Governor Cuomo announces that New York City is expected to begin Phase 1 of reopening on Monday, June 8th. (https://www.governor.ny.gov/news/governor-cuomo-announces-new-yorkcity-enter-phase-1-reopening-june-8-and-five-regions-enter)
- June 1st: Governor Cuomo announces overnight curfew in NYC after a weekend of protests due to the death of George Floyd. No-non local vehicles permitted in Manhattan below 96th street, and Citi Bike is shut down during curfew hours. (https://www.governor.ny.gov/news/governor-cuomo-and-mayor-de-blasio-announce-citywide-curfew-new-york-city-will-take-effect)
- June 5th: The MTA lays out its 13-point "Action Plan For a Safe Return" in preparation for New York City's reopening. (https://new.mta.info/document/17751)
- June 7th: Mayor de Blasio announces the end of protest-related curfews ahead of schedule, effective immediately. (https://www1.nyc.gov/assets/home/downloads/pdf/executive-orders/2020/eeo-122.pdf)



New York COVID19 Pandemic Timeline: Phase 1 to Phase 4

- June 8th: New York City begins Phase 1 of re-opening. Manufacturing, non-essential construction, and non-essential retail via curbside pickup can resume operations (https://www1.nyc.gov/office-of-themayor/news/420-20/transcript-mayor-de-blasio-appears-inside-city-hall)
 - The Staten Island Ferry begins moving to a 20-minute rush hour schedule beginning with the 3:30 PM trip from St. George. (https://www1.nyc.gov/html/dot/html/ferrybus/siferryschedule.shtml#SIschedule)
 - Mayor De Blasio announces five new busways to be created throughout the city, modeled after the 14th Street Busway, which will be made permanent. More bus lanes will be added along major corridors. (https://www1.nvc.gov/office-of-the-mayor/news/417-20/better-buses-restart-mayor-de-blasio-major-projects-speed-buses-during-city-s-phased)
- June 18th: Mayor de Blasio announces guidance for the City's Open Restaurants program, which allows qualifying restaurants and bars to expand outdoor seating on sidewalks, curb lanes, backyards, patios, plazas, and Open Streets, (https://www1.nvc.gov/office-of-the-mayor/news/449-20/open-restaurants-new-vork-city-prepares-phase-2-reopening-mayor-de-blasio-announces)
- June 19th: Governor Cuomo holds his final daily coronavirus briefing, saying "We have done the impossible." He will continue to monitor the situation and hold press conferences as needed. (https://www.governor.nv.gov/news/video-audio-photos-rush-transcript-111th-day-covid-19-briefings-governor-cuomo-delivers-address)
- June 22nd: New York City begins Phase 2 of re-opening, including in-store retail, offices, hair salons and barbershops, house of worship, and car sales. Social distancing and hygiene guidelines remain in place. (https://www1.nyc.gov/office-of-the-mayor/news/456-20/transcript-mayor-de-blasio-holds-media-availability)
 - Governor Cuomo says he is actively talking to Governor Murphy of NJ and Governor Lamont of Connecticut, and that the three governors are "seriously considering" implementing a 14-day isolation protocol for visitors from Florida, which could be extended to travelers from Arizona, Texas, and several other stats who are experiencing a rapid rise in Covid cases. (https://www.governor.ny.gov/news/audio-rush-transcript-governor-cuomo-guest-cnns-newsroom-poppy-harlow-and-jim-sciutto)
- According to a survey conducted by the Partnership for New York City, while Phase 2 allows office workers to return to their offices, respondents from 60 companies predicted that only 10% of their employees would return to the office by August 15th. Rudin Management Company said that, across its 14 offices in New York that reopened on Monday, it reached a collective 5.2 percent occupancy rate. https://www.nytimes.com/2020/06/22/nyregion/nyc-phase-2-reopening-coronavirus.html
- June 24th: The state governments of New York, New Jersey, and Connecticut issue self-quarantine restrictions on travelers returning from a list of 9 states with high infection rates, with the ability to add more as the situation changes. (https://coronavirus.health.ny.gov/system/files/documents/2020/06/interimguidance_traveladvisory.pdf)
- June 29th: Mayor de Blasio announces that, while outdoor dining is "working" in New York City and that the city is moving on track for Phase 3 of reopening on July 6th, the reopening of indoor dining may be delayed due to ongoing coronavirus concerns. Governor Cuomo echoed these concerns. (https://www1.nyc.gov/office-of-the-mayor/news/482-20/transcript-mayor-de-blasio-holds-media-availability)
- July 6th: New York City begins Phase 3 of re-opening. Originally, this was to include indoor dining at restaurants, but this element has been postponed in light of outbreaks in other states. (https://www1.nyc.gov/office-of-the-mayor/news/497-20/transcript-mayor-de-blasio-holds-media-availability)
 - The Staten Island Ferry resumes regular rush-hour service, with boats running every 15 minutes from 7:00 am 9:00 am and 5:00 pm 7:00 pm. https://mms.tveyes.com/PlaybackPortal.aspx?SavedEditID=ea13aec9-00c3-46cf-998e-a31fa521b891
- July 20th: New York City enters Phase 4 of re-opening, which includes outdoor activities like zoos and botanical gardens, as well as professional sports without spectators. Indoor dining, originally part of Phase 3, is still prohibited. (https://www1.nvc.gov/office-of-the-mayor/news/531-20/transcript-mayor-de-blasio-holds-media-availability)
- August 7th: Governor Cuomo announces that schools in New York State can reopen in the fall, though it will be up to local districts to determine if and how to do so. (https://www.governor.nv.gov/news/audio-rush-transcript-governor-cuomo-announces-based-each-regions-infection-rate-schools-across)



New York COVID19 Pandemic Timeline: September 2020 – November 2020

- August 31st: MTA restarts front door bus loading and fare collection (https://www.ny1.com/nyc/all-boroughs/transit/2020/08/18/mta-bringing-back-front-door-bus-boarding-and-farecollection#:~:text=On%20August%2031%2C%20the%20MTA,the%20%242.75%20fare%20once%20again.)
- September 9th: Governor Cuomo announces that restaurants can accommodate indoor dining a 25% capacity starting September 30th (https://www.governor.nv.gov/news/governor-cuomo-announcesindoor-dining-new-york-city-allowed-resume-beginning-september-30-25)
- September 12th: Citi Bike records over 100,000 rides in a single day, setting a record for the service
- September 16th: Mayor De Blasio announces that Open Restaurants will expand to weekdays citywide: (https://www1.nyc.gov/office-of-the-mayor/news/660-20/mayor-de-blasio-open-streetsrestaurants-will-expand-weekdays-40-locations-citywide)
- September. 21st; 3-K, Pre-K and District 75 schools reopen, and all students who opted into the all-remote program start their first full day of instruction.
- September 26th: An updated NYC Ferry Fall 2020 Schedule went into effect.
- October 4th: Mayor Bill de Blasio sends a proposal to the New York State government to close non-essential businesses, including public and private schools, in nine new York City zip codes where Covid-19 rates have remained over 3\$ for the past seven days. This would also include closing down high-risk activities in 11 additional New York City zip codes of concern. (https://www1.nyc.gov/office-of-themayor/news/693-20/mayor-de-blasio-sends-state-proposal-close-schools-non-essential-businesses-nine-new-york#/0)
- October 6th: Governor Cuomo announces the Cluster Action Initiative, which will close or reduce capacity at non-essential businesses based on distance from Covid-19 infection hotspots. https://www.amny.com/news/cuomo-to-enact-new-action-plan-to-target-covid-19-clusters/
- October 17th: Governor Cuomo outlines a new "micro-cluster" strategy to tackle COVID-19 hot spots that emerge in New York over the fall. https://www.governor.ny.gov/news/governor-cuomooutlines-new-micro-cluster-strategy-tackle-covid-19-hot-spots-arise-fall He also announces that most movie theaters—though not movie theaters in New York City—can re-open at 25% capacity on October 23rd. https://www.governor.ny.gov/news/governor-cuomo-announces-most-movie-theaters-outside-new-york-city-can-reopen-october-23
- October 18th: Governor Cuomo announces a draft New York State COVID-19 Vaccination Administration Program. https://www.governor.ny.gov/news/governor-cuomo-announces-draft-new-yorkstate-covid-19-vaccination-administration-program
- October 27th: Governor Cuomo announces the MTA to launch a new voluntary COVID-19 screening program for frontline employees. https://www.governor.nv.gov/news/governor-cuomo-announcesmta-launch-voluntary-covid-19-screening-program-frontline-employees
- October 30th: Governor Cuomo releases guidelines on testing protocol for schools to re-open in red or orange micro-cluster zones: https://www.governor.ny.gov/news/governor-cuomo-releasesguidelines-testing-protocol-schools-reopen-red-or-orange-micro-cluster
- October 31st: Governor Cuomo announces new guidelines allowing out-of-state travelers to test out of mandatory 14-day quarantine. https://www.governor.ny.gov/news/governor-cuomo-announcesnew-guidelines-allowing-out-state-travelers-test-out-mandatory-14-day
- November 14th: Amid rising positivity rates, Governor Cuomo announces that restaurants, bars, and other SLA-licensed entities must close in-person service from 10pm to 5am. https://www.governor.nv.gov/news/audio-rush-transcript-governor-cuomo-announces-restaurants-bars-other-sla-licensed-entities

