

# **COVID19 IMPACTS ON TRANSPORTATION**

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

July 28, 2020



- The NYC Department of City Planning's Transportation Division is compiling data to help understand the effects of COVID19 on the transportation network. This is our eighteenth weekly report.
- 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. Citi Bike
  8. Cell Phone-based Mobility
  9. Timeline
- We continue to expand the content of these weekly reports as new data become available to us, and are prioritizing work around understanding how mobility trends relate to the economic and employment landscape.
- 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](mailto:lsmith@planning.nyc.gov)) with questions or comments.

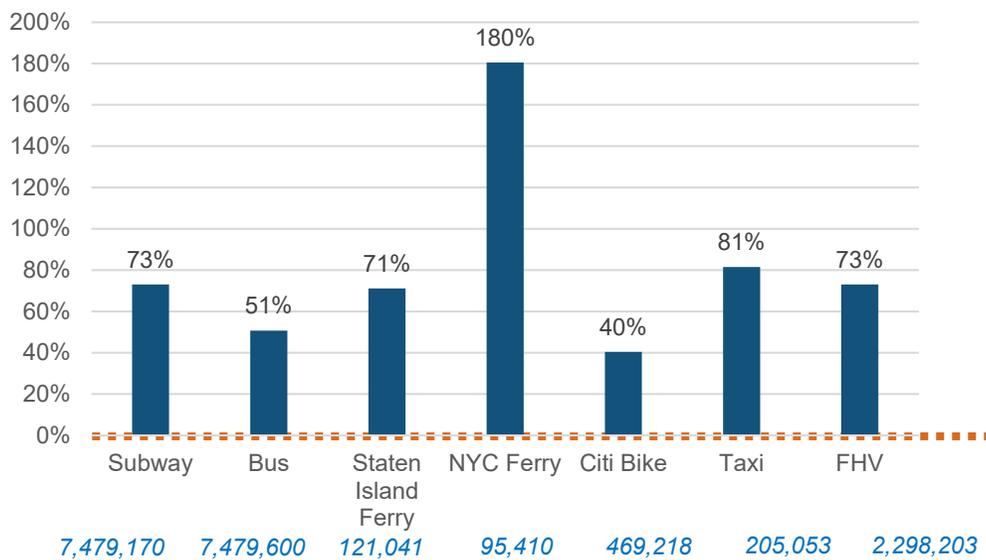
- **Weekday travel week over week has stabilized, while weekend travel continues to rise.**
- As of the week of July 20, subway ridership was up 73 percent, and bus ridership up 51 percent, from early June. **Total subway and bus ridership changes were insignificant over the previous week.**
- Weekday subway ridership during the week of July 20 was comparable to the previous week, while weekend ridership was up 4 percent.
- Weekday bus ridership was down 2 percent during the week of July 20 from the previous week, while weekend ridership was up 5 percent.
- Weekday MNR ridership for the week of July 20 was up 1 percent over the previous week, while weekend ridership was up 6 percent. Weekday LIRR ridership for the week of July 20 remained steady compared to the previous week, while weekend ridership was up 2 percent.
- The week of July 20 saw over **123,000 Staten Island Ferry riders**. This represents a one percent increase, or about **800 additional riders**, compared to the week of July 13. NYC Ferry average weekday ridership **decreased by 17 percent**, while average weekend ridership **increased by 4 percent**.
- Total weekday traffic counts on MTA bridges and tunnels during the week of July 20 remained steady compared to the previous week. Weekend traffic counts were up 12 percent.
- **Vehicle entries into Manhattan, and also into the Manhattan CBD, on Thursday, July 23 were 94 percent and 88 percent, respectively, over their totals on Thursday, March 12.**
- Since the start of Phase 1, common Citi Bike origin-destination pairings have increased, but still appear to be more recreationally-oriented than pre-pandemic travel.
- Cell phone based mobility data indicates a very slight decrease in the number of devices “staying at home” on weekends, with a flattening trend on weekdays.

# Citywide Trends

# Citywide Trends

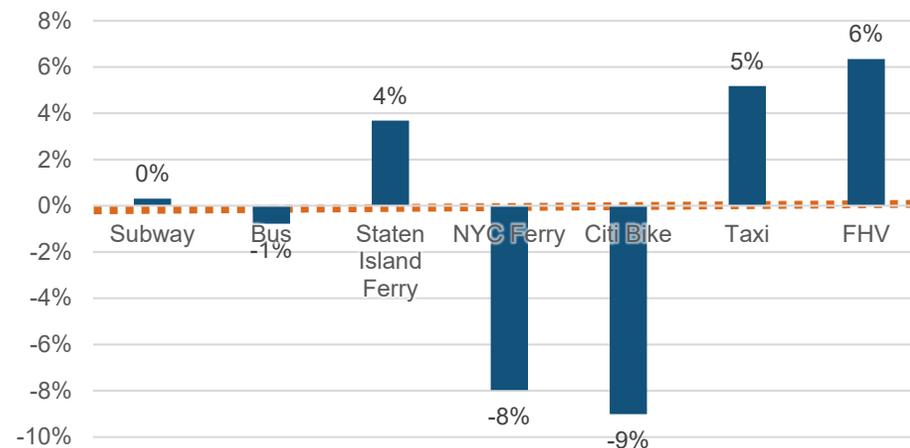
- New York City entered Phase 4 of reopening on Monday, July 20. Use of all modes of travel was up substantially over early June.
- As of the week of July 19, subway ridership was up 73 percent, and bus ridership up 51 percent, from early June.
- Total subway and bus ridership changes were insignificant over the previous week.

Week of 7/20/2020 Compared to Week of 6/1/2020



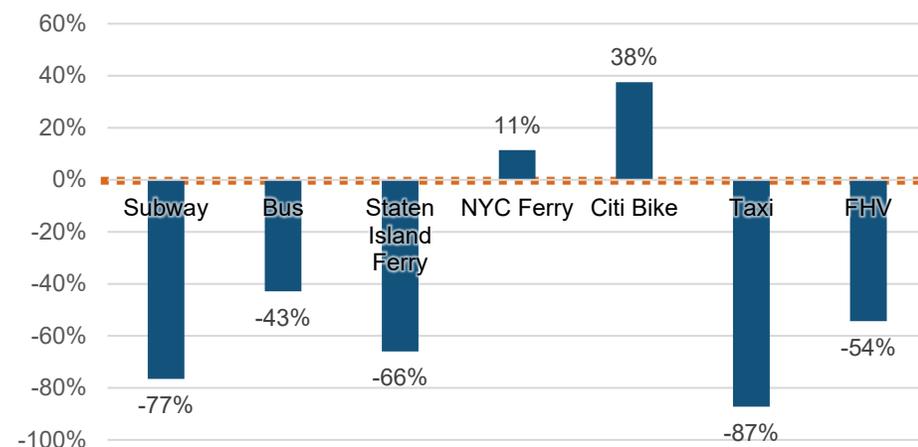
Baseline:  
Total trips  
week of  
6/1/2020  
(week prior to  
Phase 1  
Reopening)

Week of 7/20/2020 Compared to Week of 7/13/2020



Baseline:  
Total trips  
week of  
07/13/2020

Week of 7/20/2020 Compared to Week of 03/02/2020



Baseline:  
Total trips  
week of  
03/02/2020

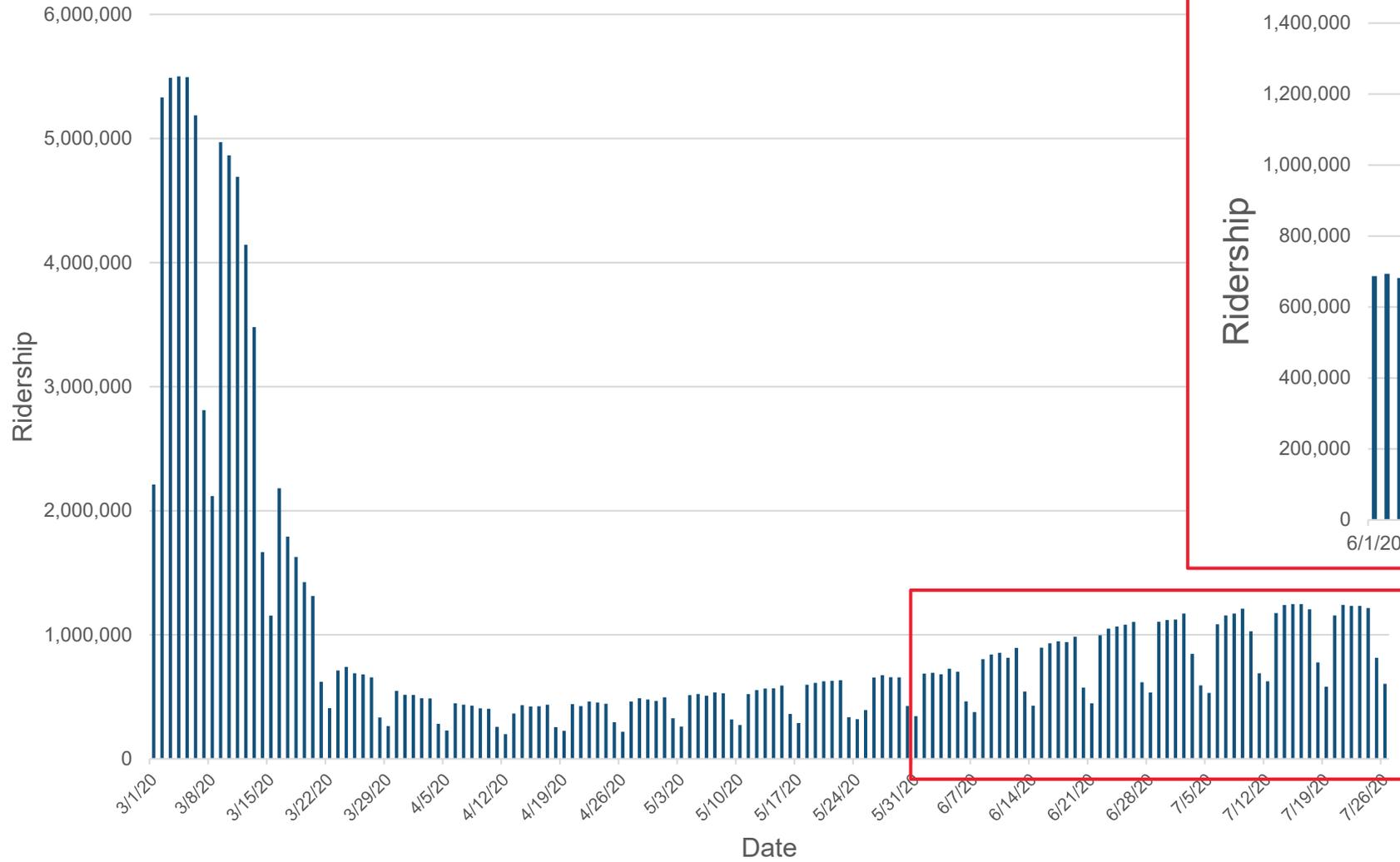
Data sources: MTA (Subway, Bus), EDC (NYC Ferry), DOT (Citi Bike, SI Ferry), TLC (Taxi, FHV).

# MTA data: Subway and Bus

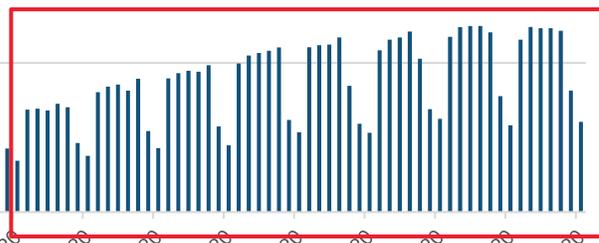
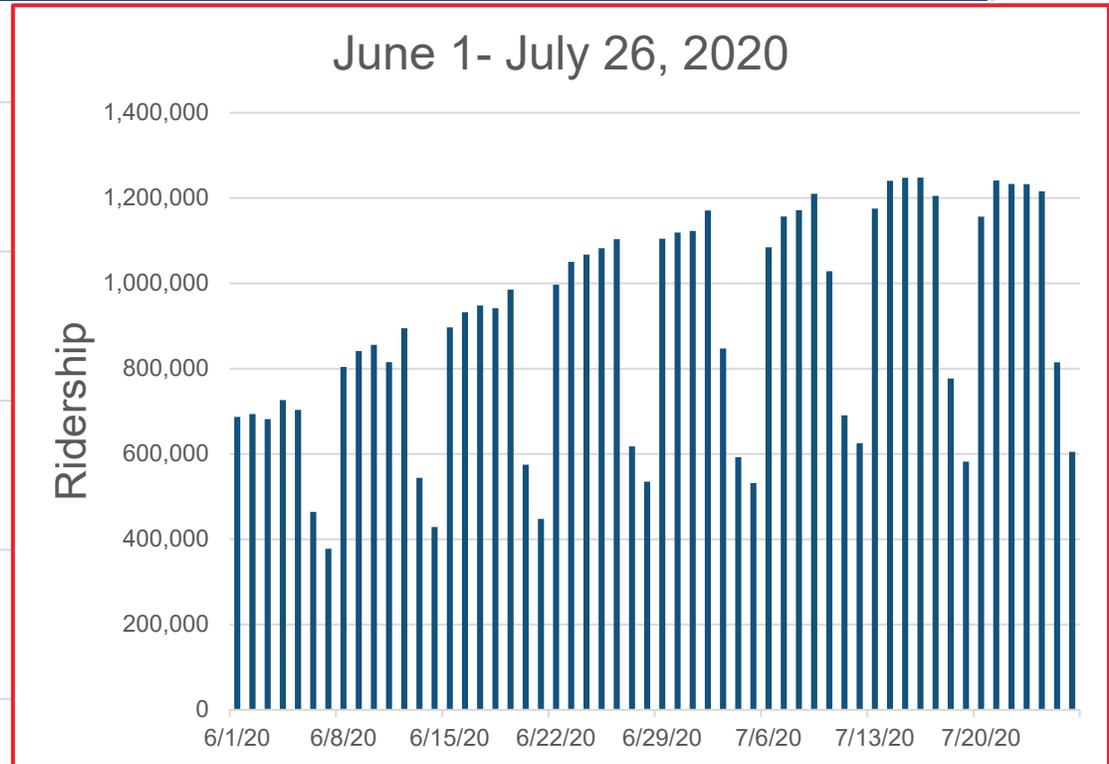


# Subway System-wide Ridership Changes

Estimated\* MTA Subway Ridership (March 1- July 26, 2020)



June 1- July 26, 2020



- Weekday subway ridership during the week of July 20 was comparable to the previous week, while weekend ridership was up 4 percent.
- Weekday subway ridership is now at nearly 25 percent of pre-pandemic levels.

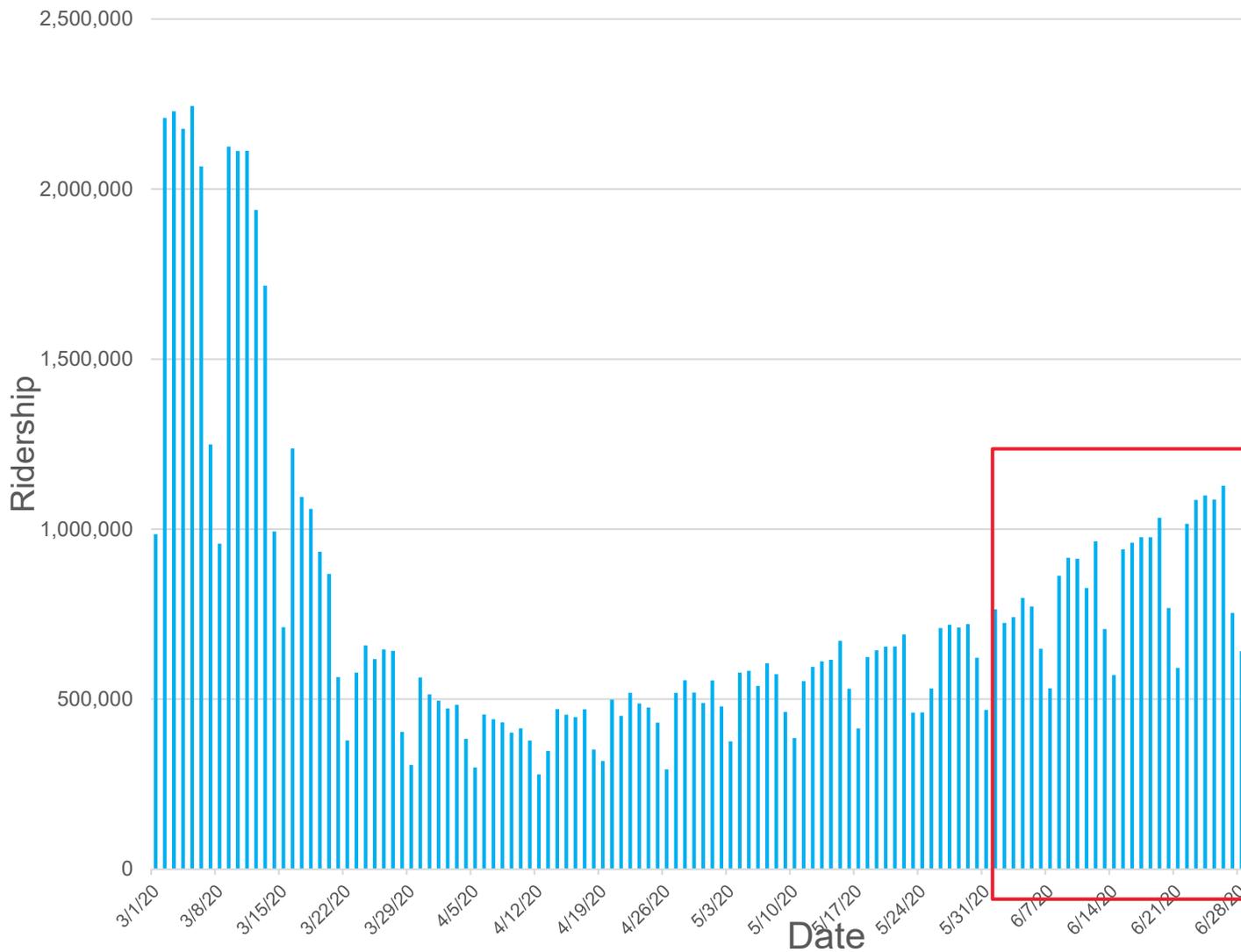
\*From the MTA: Subway ridership figures are determined from MetroCard and OMNY swipes and taps. Figures from recent days may be revised as data reconciliation processes are carried out. Data sources: MTA

(<https://new.mta.info/coronavirus/ridership>)

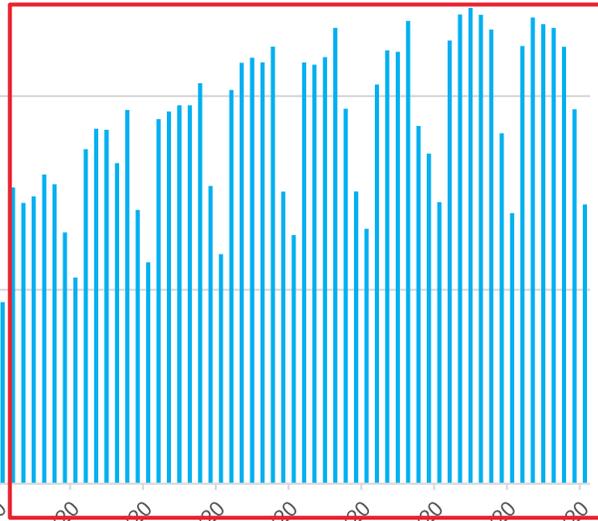
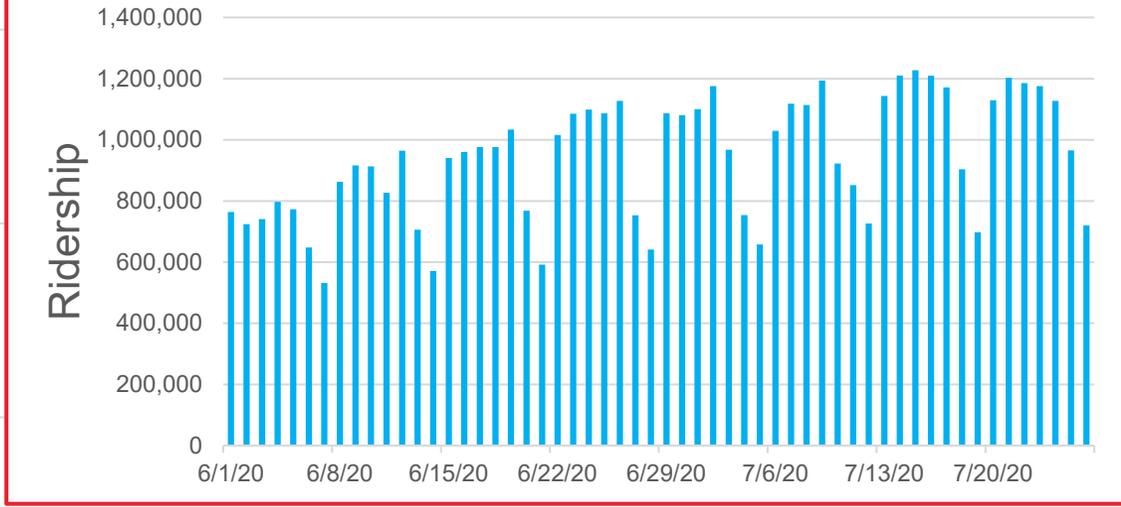


# MTA Bus System-wide Ridership Changes

Estimated \* MTA Bus Ridership (March 1- July 26, 2020)



June 1- July 26, 2020



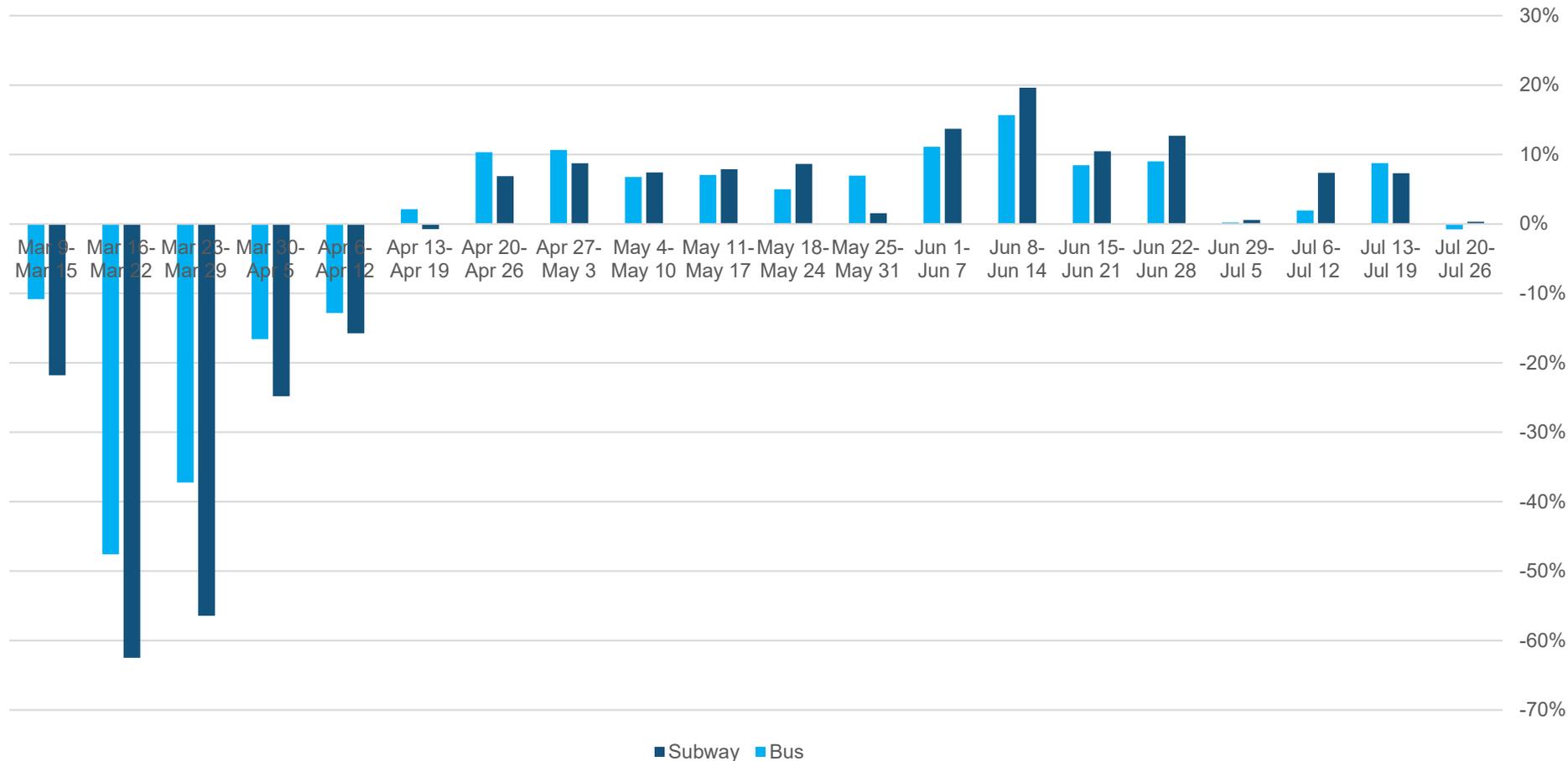
- Weekday bus ridership was down 2 percent during the week of July 20 from the previous week, while weekend ridership was up 5 percent.
- Weekday bus ridership is now at nearly half of pre-pandemic levels.

\*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>)

# MTA Subway & Bus System-wide Ridership Changes

Percent Change of Estimated\* MTA Subway & Bus Weekly Ridership  
(March 1- July 26, 2020)

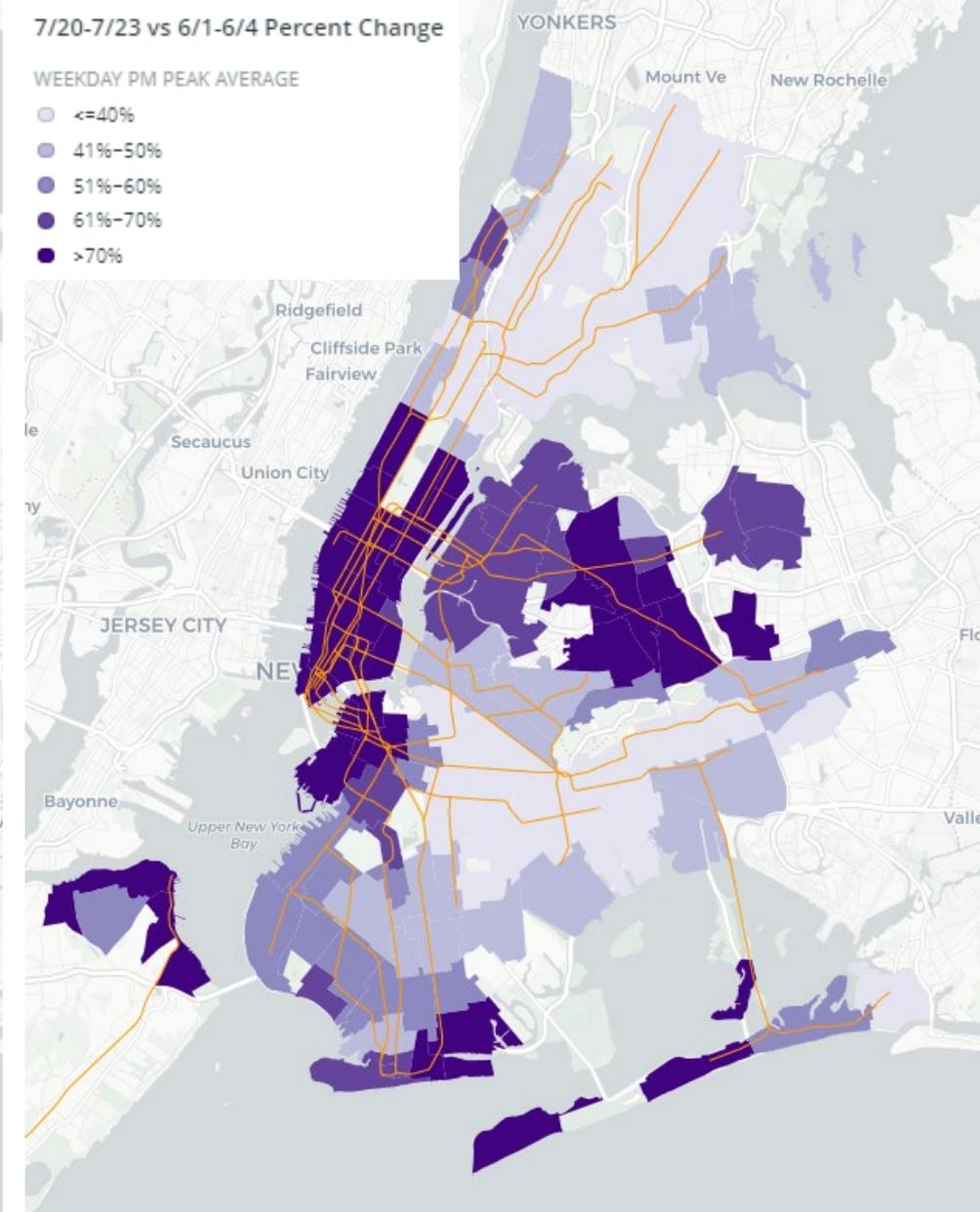
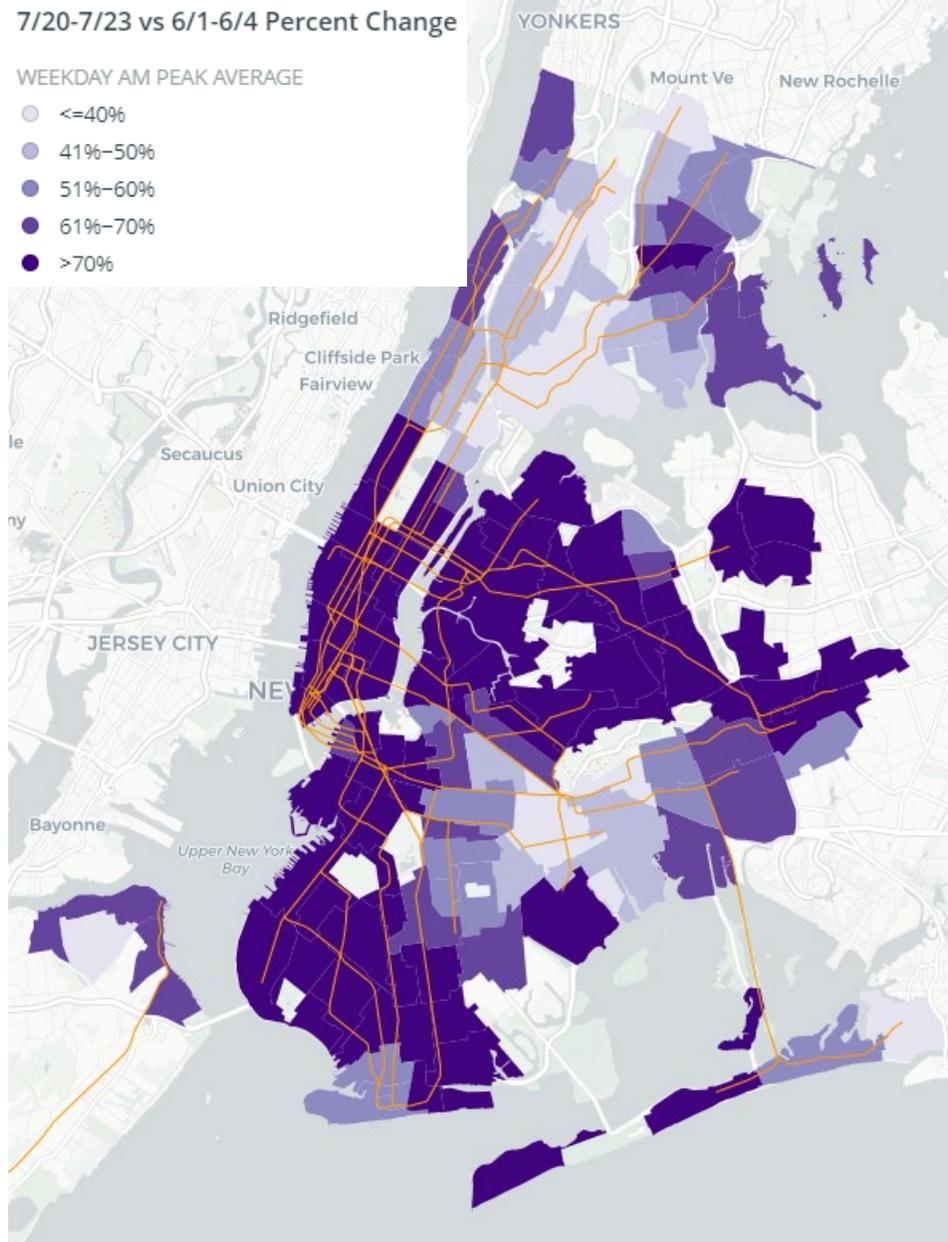


- Both subway and bus ridership have generally been increasing week-over-week since mid-April.
- During the week of July 20, weekday ridership for both subway and bus were down slightly, while weekend ridership was up.
- In total subway and bus ridership for the week of July 20 was essentially unchanged from the previous week.

\*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>)

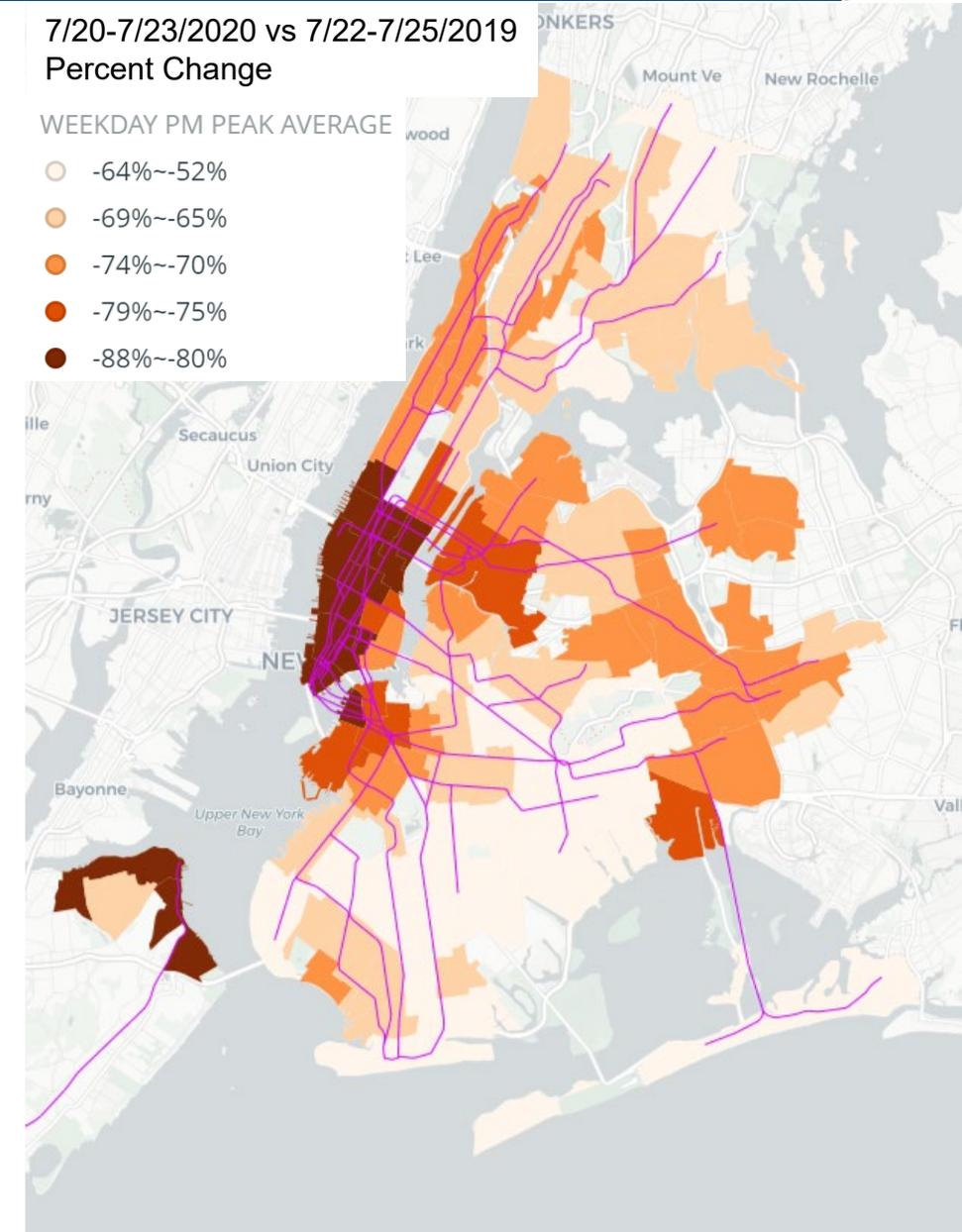
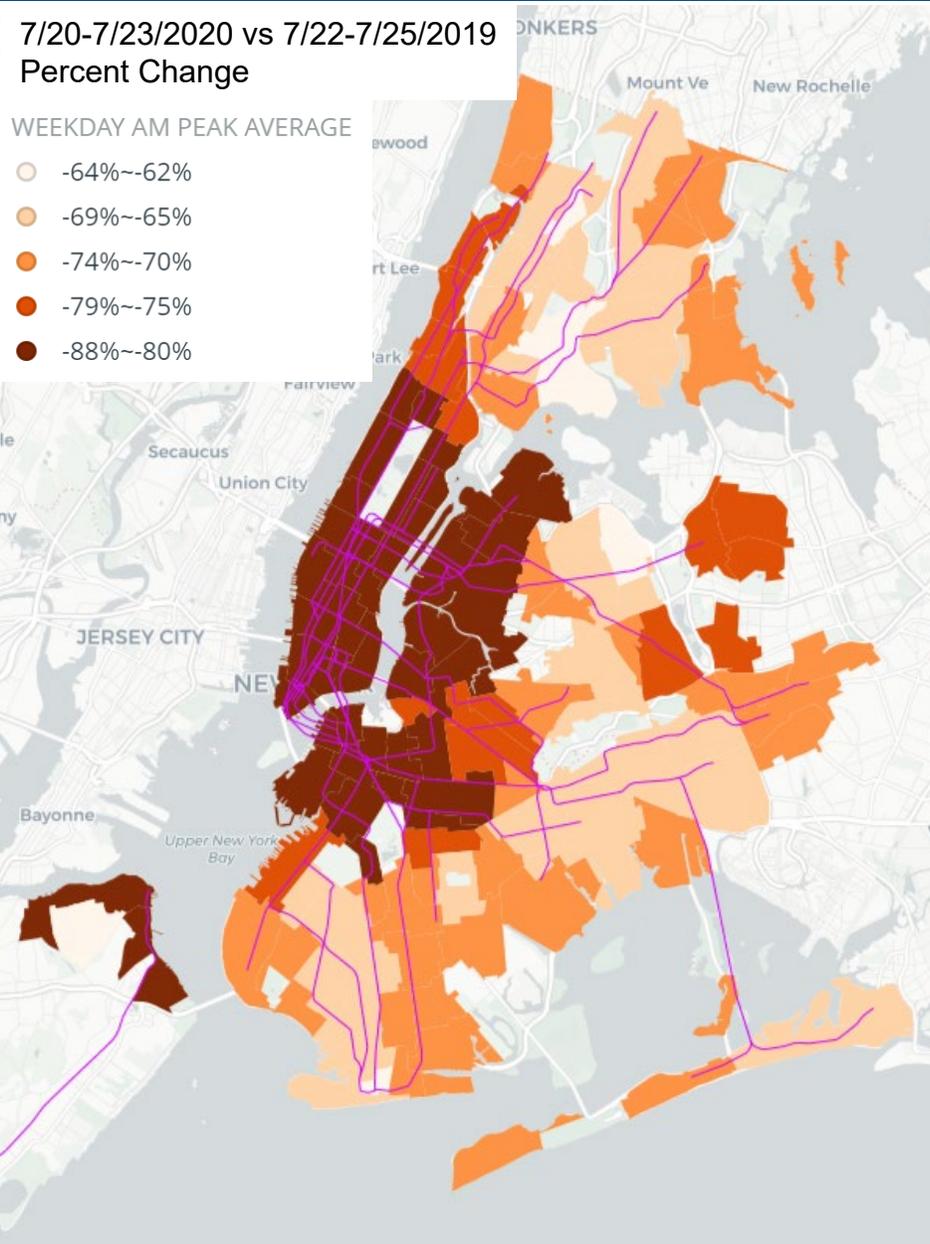
# Weekday AM and PM Peak Turnstile Data – Comparisons with early June

- AM peak subway ridership has increased by more than 70 percent since the start of June in most of the Manhattan CBD, and much of Brooklyn and Queens. Ridership in the Bronx, central Brooklyn, and southeast Queens lags.
- PM peak ridership – an indicator of where people are commuting home from – increased by more than 70 percent in the Manhattan CBD, Downtown Brooklyn, St. George Staten Island, and central Queens including Jackson Heights, Corona, Rego Park and Forest Hills.



# Weekday AM and PM Peak Turnstile Data – Comparisons with July 2019

- The maps on the right illustrate changes in AM and PM peak ridership by neighborhood during the week of July 20 compared to the same week in 2019.
- AM peak ridership remains more than 80% down in the much of Manhattan and in western Brooklyn and Queens over the same period in 2019.
- PM peak ridership – an indicator of where people are commuting home from – is more than 80 percent down in the Manhattan CBD, and more than 70 percent down in the city's other business districts, including the greater downtown Brooklyn area, Long Island City, Flushing, and Jamaica.



# Comparing Weekday PM Peak Turnstile Data and Employment Locations

- PM peak ridership – an indicator of where people are commuting home from – increased by more than 70 percent in the areas outlined in orange. These neighborhoods include the Manhattan CBD, Downtown Brooklyn, Coney Island, St. George, the Rockaways, Flushing, and central Queens.
- The underlying map illustrates total private sector jobs by Neighborhood Tabulation Area (NTA) in 2017.
- The areas of the city showing the greatest increases in PM peak ridership since the start of Phase 1 are only somewhat aligned with the areas with the greatest concentration of private sector jobs pre-COVID.
- Pre-COVID, workers in the Manhattan Core, Long Island City, and downtown Brooklyn were very likely to commute by subway.

7/20-7/23vs 6/1-6/4 Percent Change

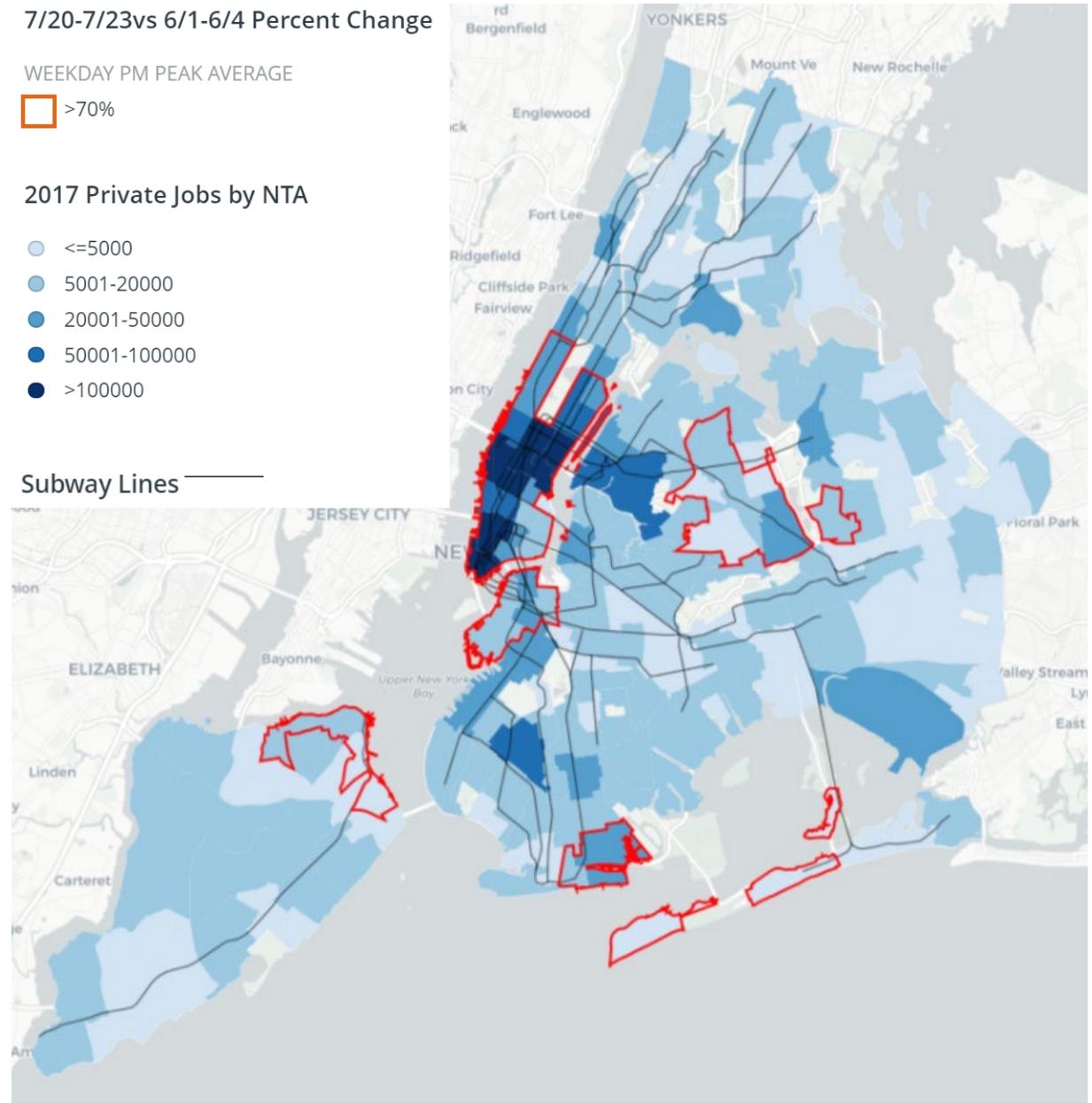
WEEKDAY PM PEAK AVERAGE

☐ >70%

2017 Private Jobs by NTA

- ≤5000
- 5001-20000
- 20001-50000
- 50001-100000
- >100000

Subway Lines





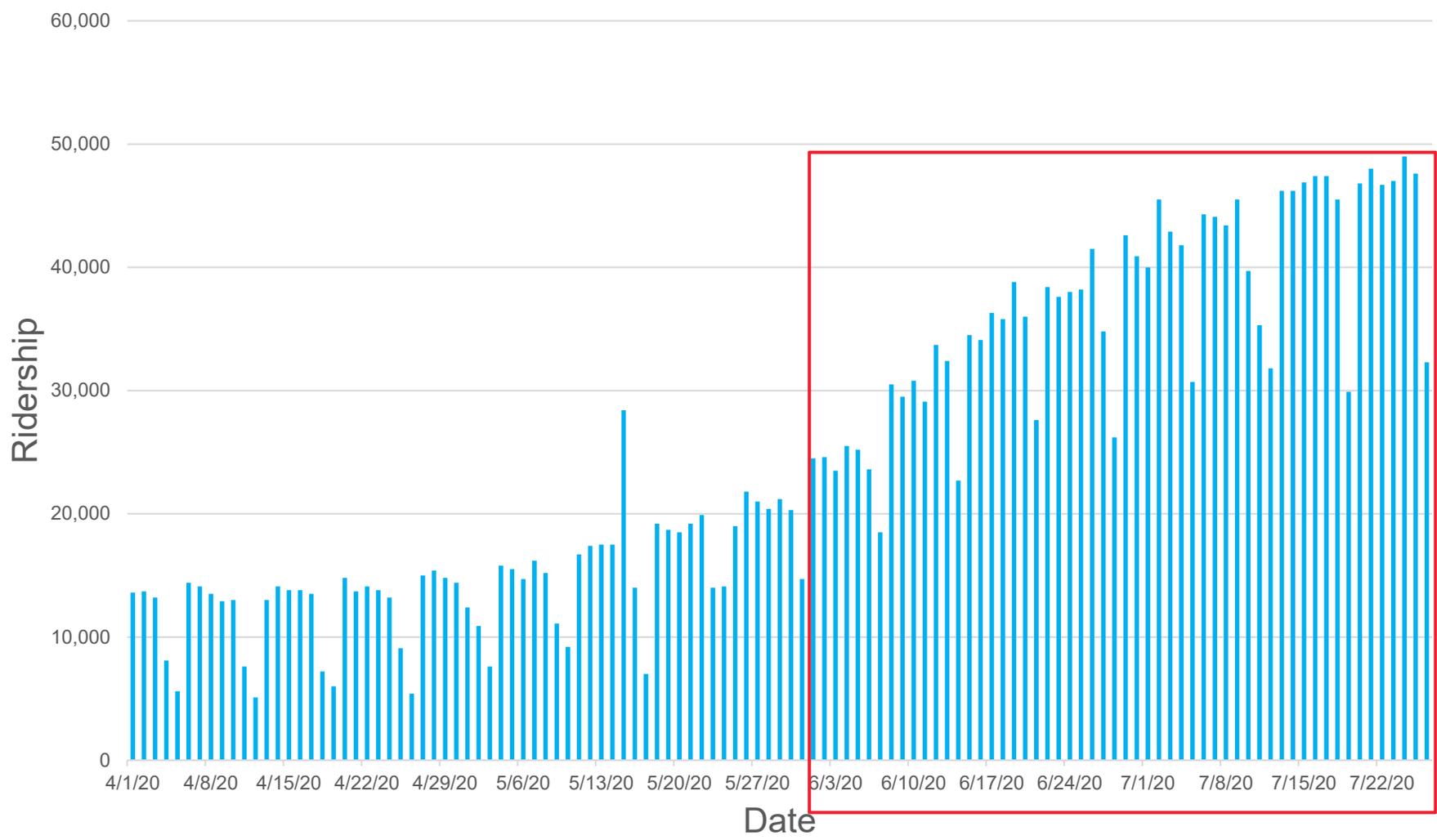
**MTA data:**

**Metro North Railroad, Long Island Rail  
Road, Access-A-Ride**

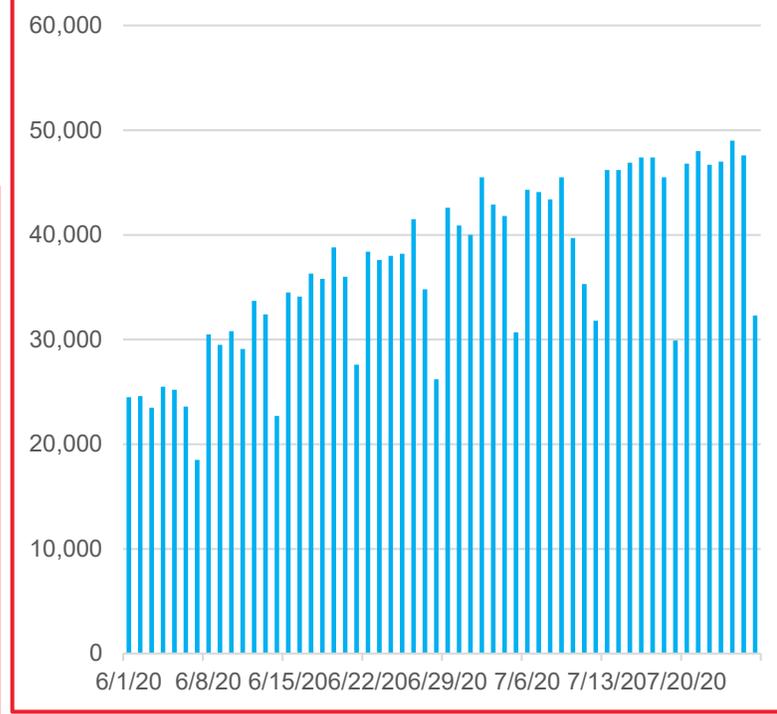


# Metro-North Railroad Ridership Changes

### Estimated \* MTA Metro-North Railroad (March 1- July 26, 2020)



### June 1- July 26, 2020

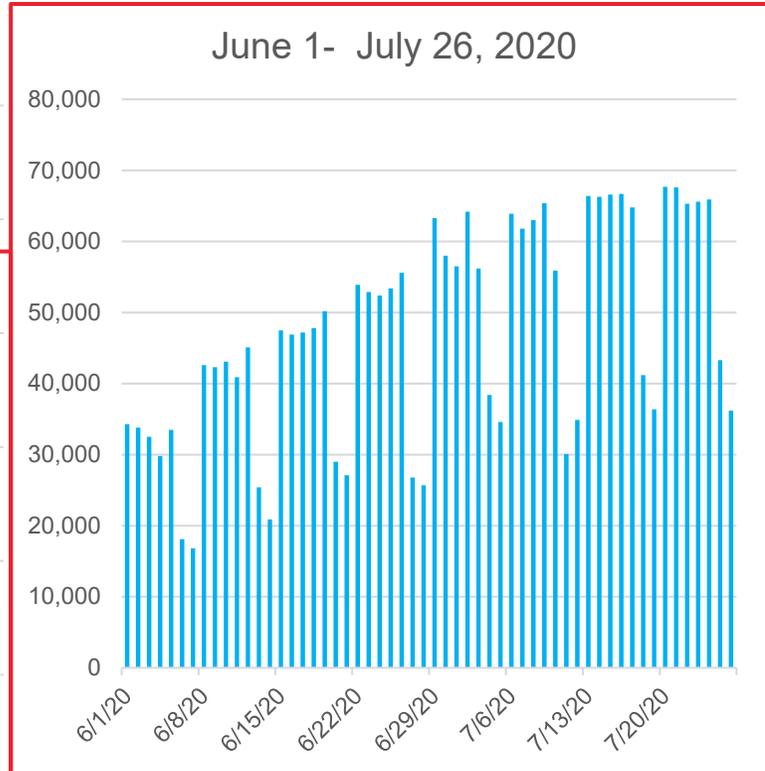
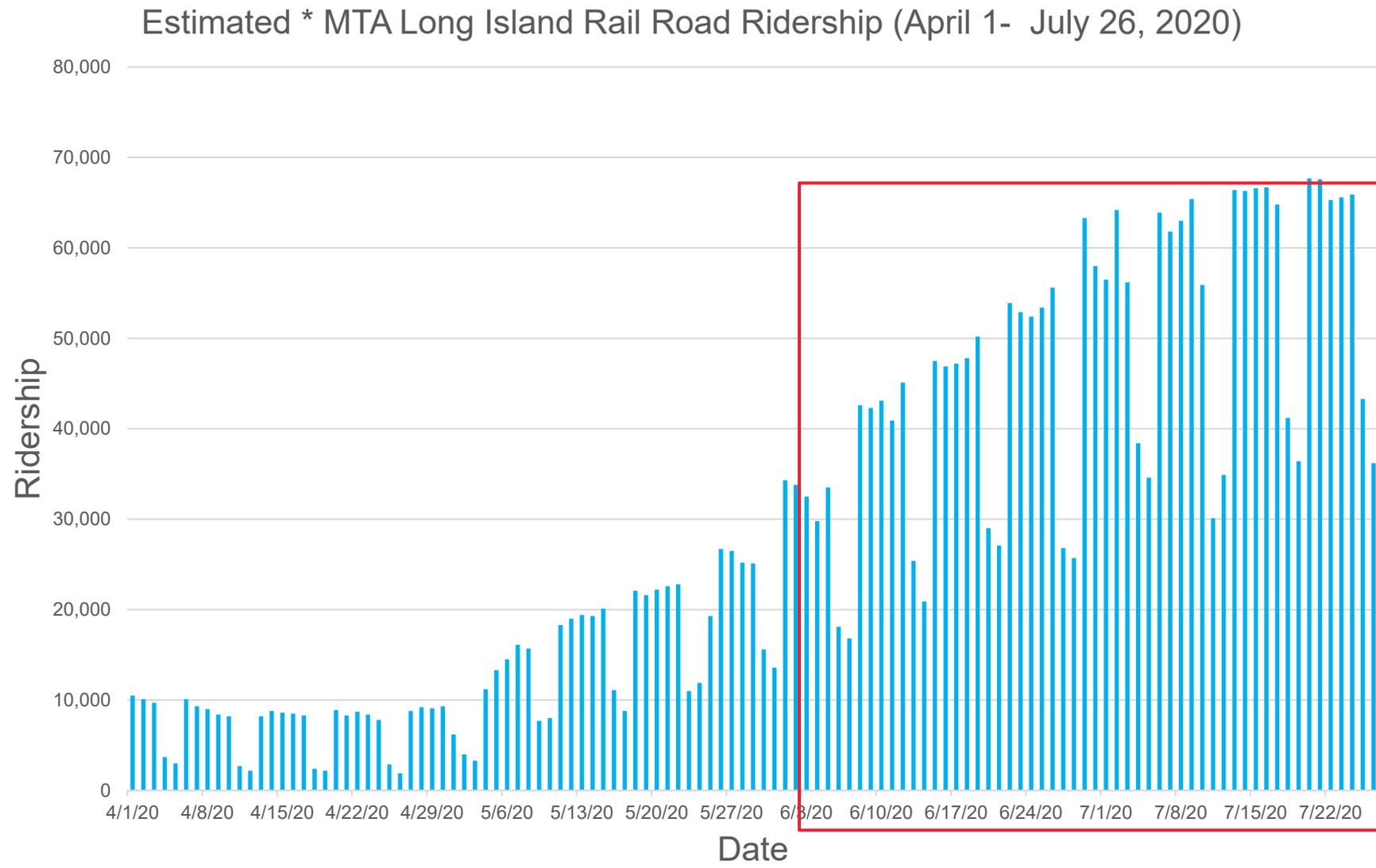


- Weekday MNR ridership for the week of July 20 was up 1 percent over the previous week, while weekend ridership was up 6 percent.

\*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

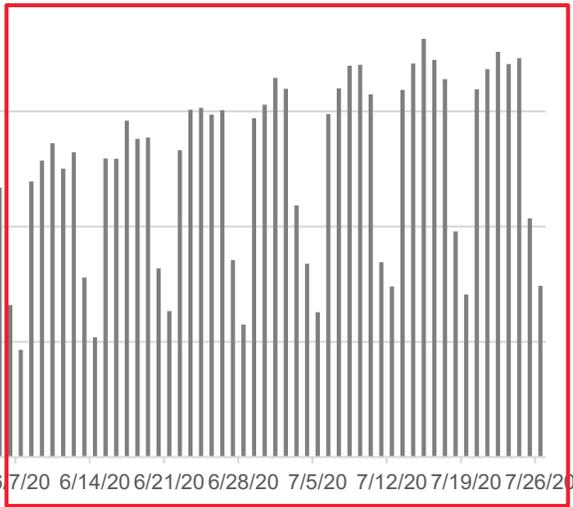
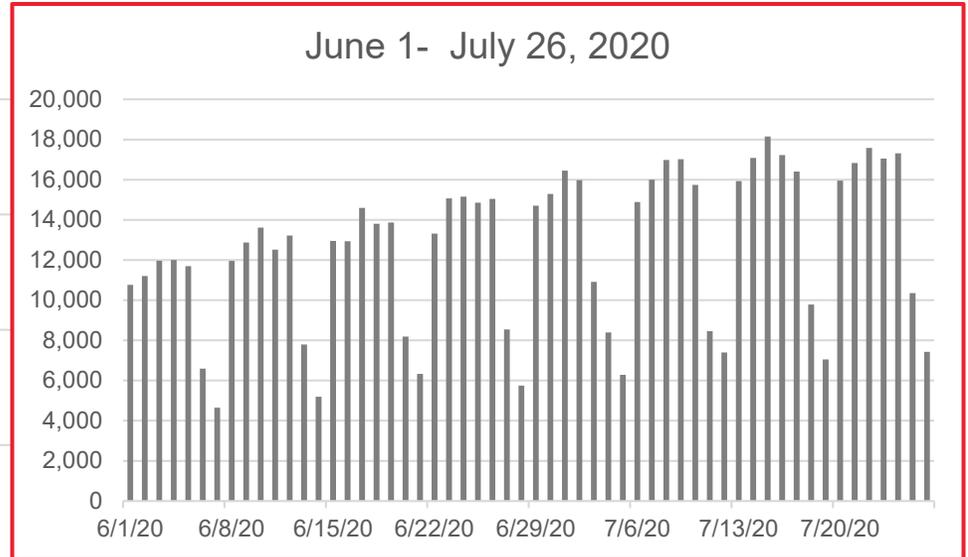
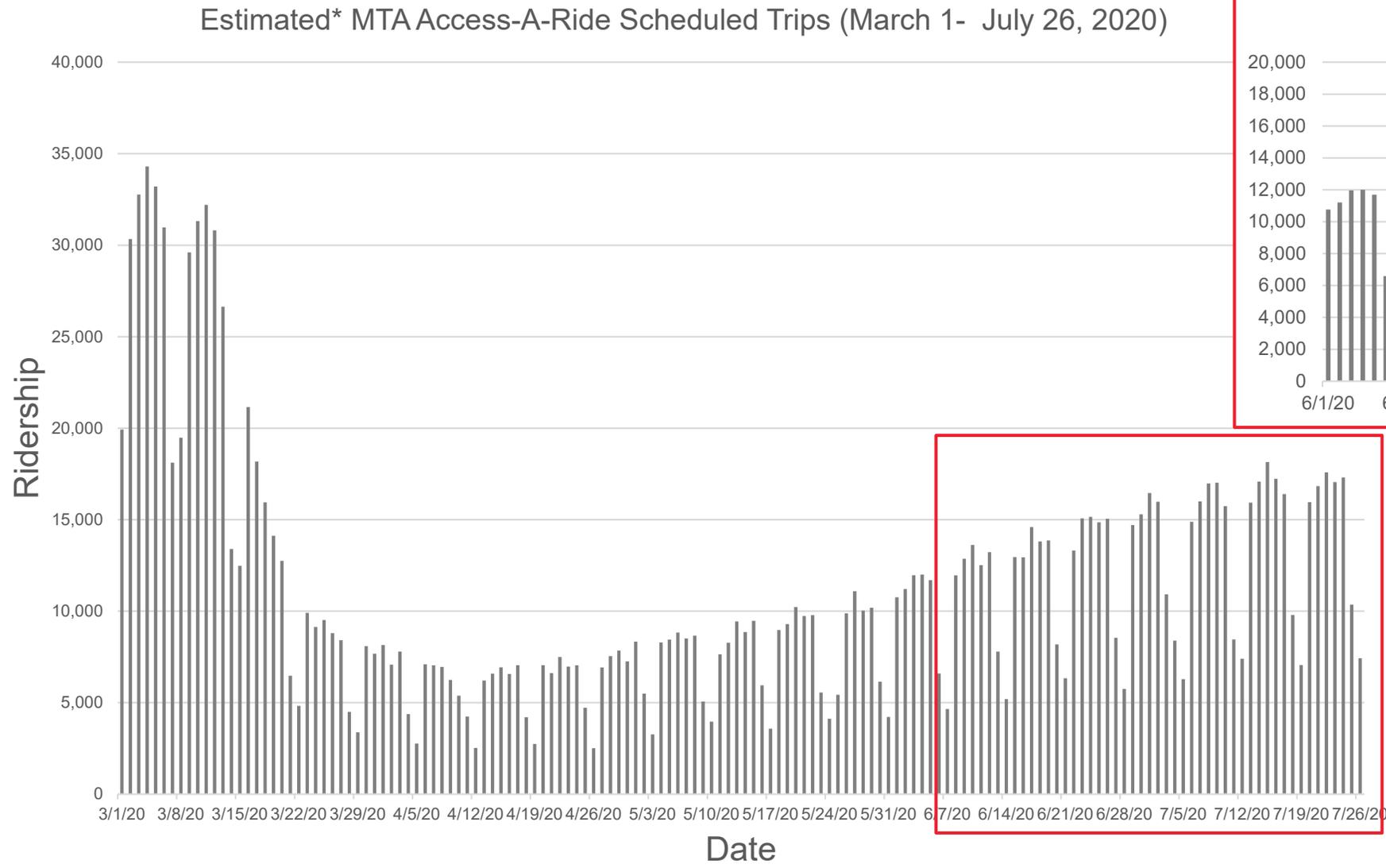


- Weekday LIRR ridership for the week of July 20 remained steady compared to the previous week, while weekend ridership was up 2 percent.

\*From the MTA: LIRR 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>)



# Access-A-Ride Scheduled Trip Changes



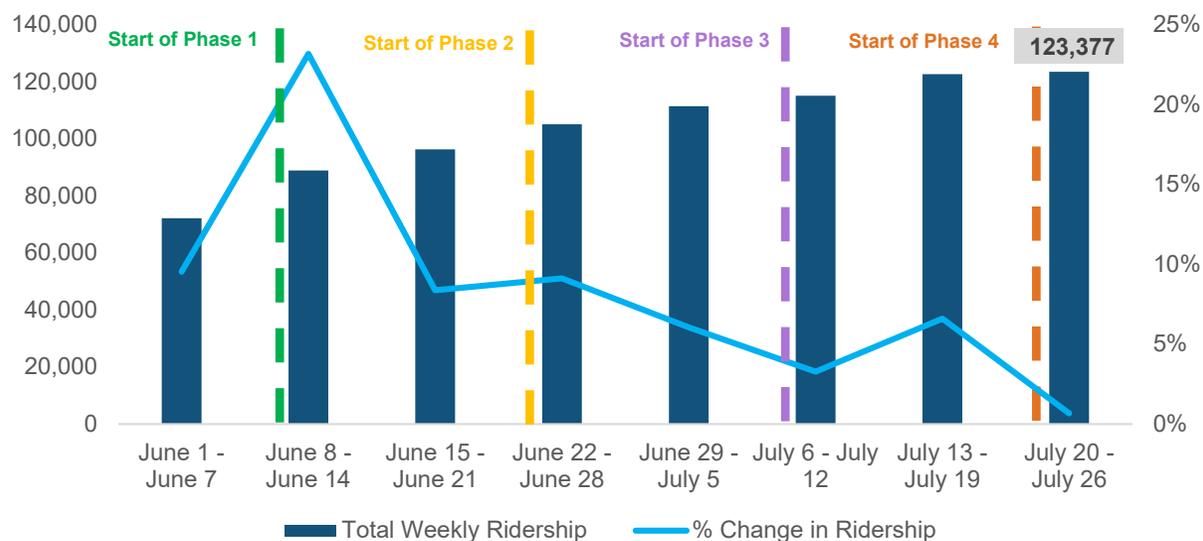
- Weekday Access-A-Ride scheduled trips for the week of July 20 remained steady compared to the previous week, while the weekend scheduled trips were up 6 percent.

\*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, cancellations, no shows, and on-street issues, would delay release of data for several weeks.. Data sources: MTA (<https://new.mta.info/coronavirus/ridership>)

# Ferry

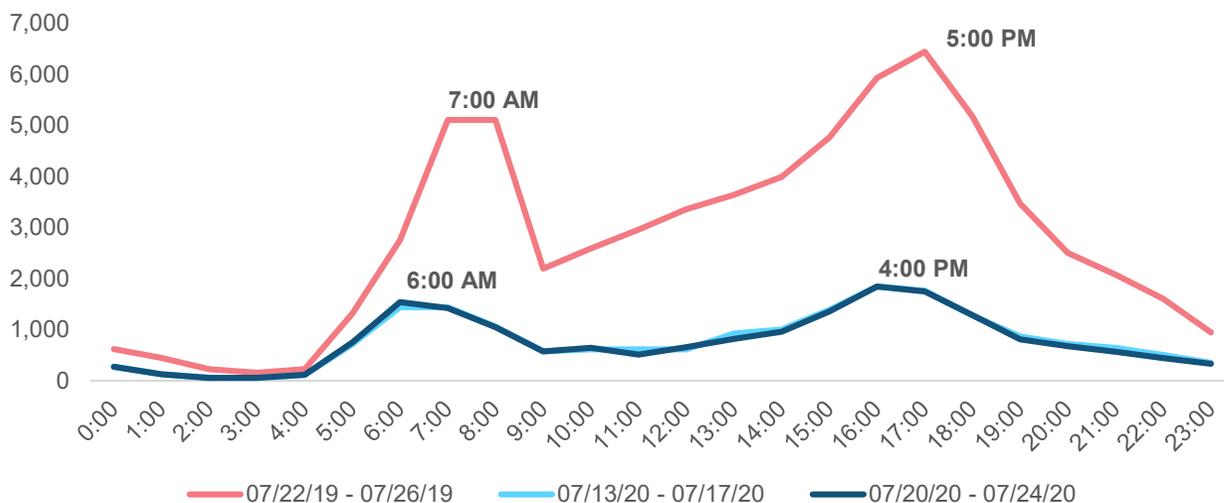
# The Staten Island Ferry and NYC Ferry

### SIF Total Weekly Ridership

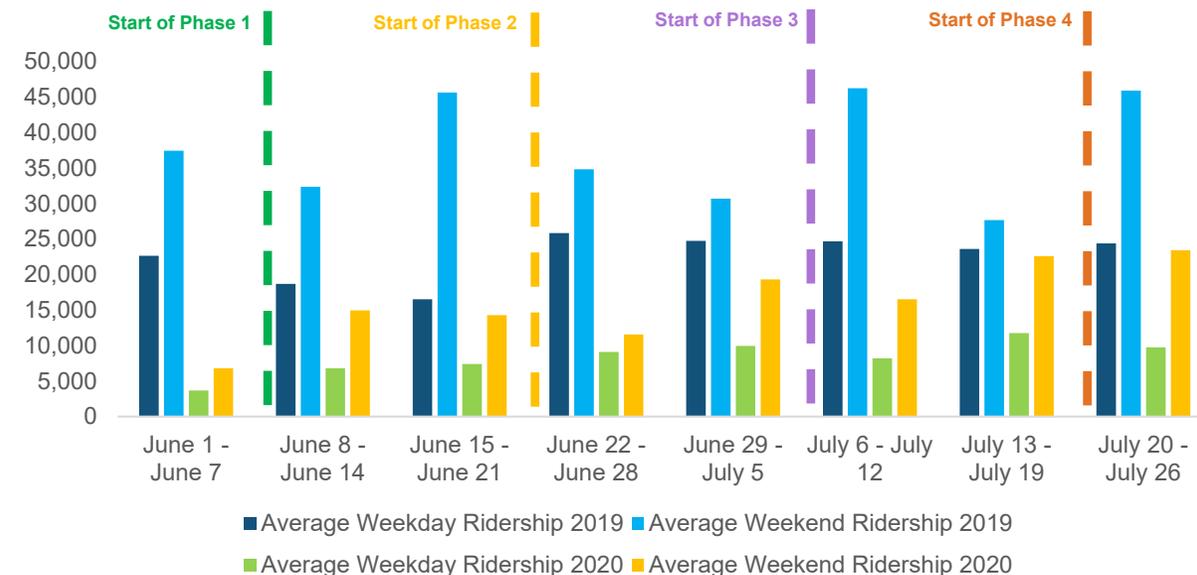


- The week of July 20 saw over **123,000 Staten Island Ferry riders**. This represents a one percent increase, or about **800 additional riders**, compared to the week of July 13.
- For SIF, weekday peak hour ridership remained at **6:00 am for the morning and 4:00 pm in the afternoon**.
- The week of July 20 saw NYC Ferry weekly ridership decrease by **8 percent**, or by about **8,000 riders**, compared to the week of July 13.
- NYC Ferry average weekday ridership **decreased by 17 percent**, while average weekend ridership **increased by 4 percent**.

### SIF Average Weekday Total Ridership Per Hour



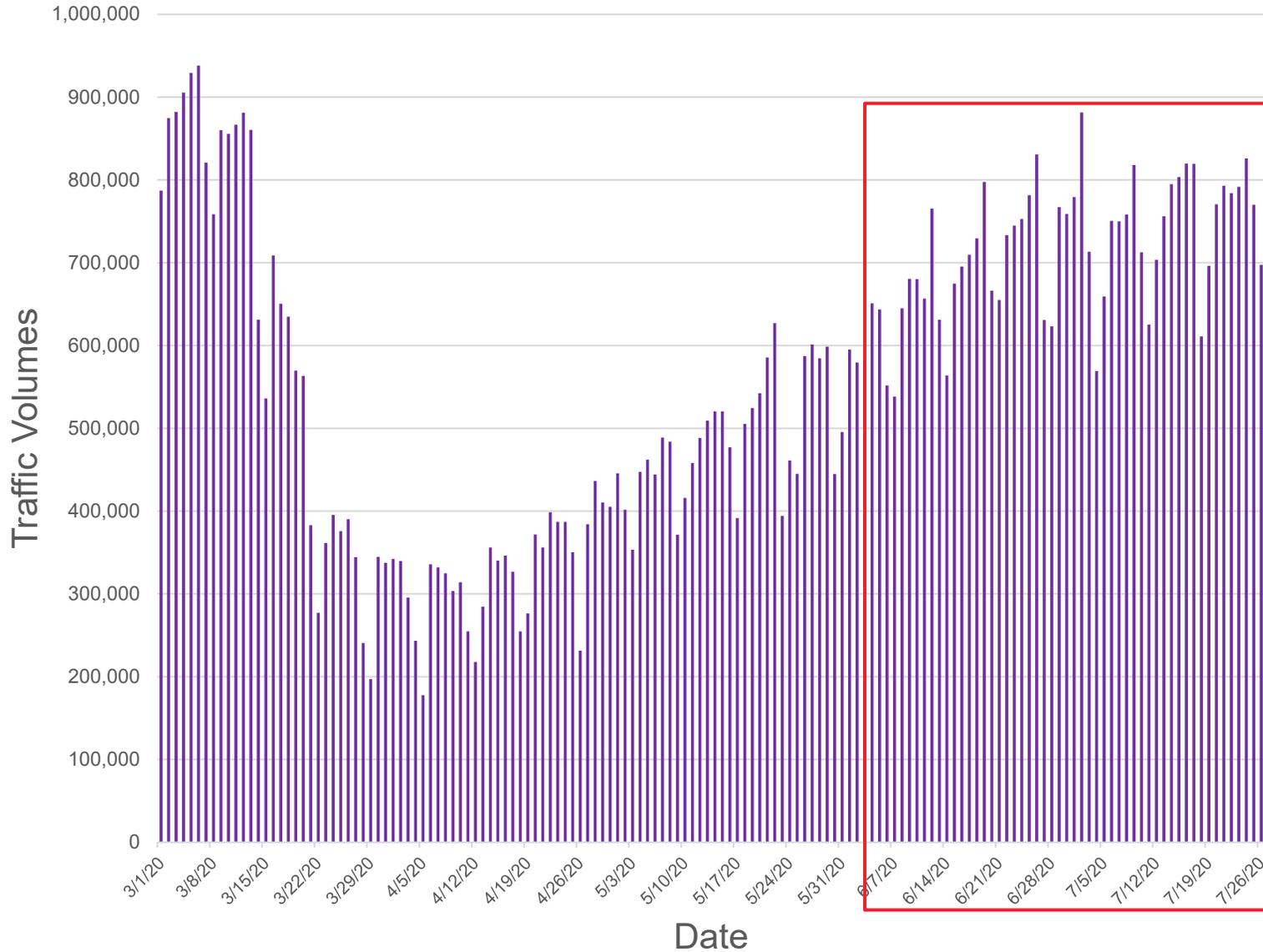
### NYC Ferry Weekly Ridership Weekday vs. Weekend Averages



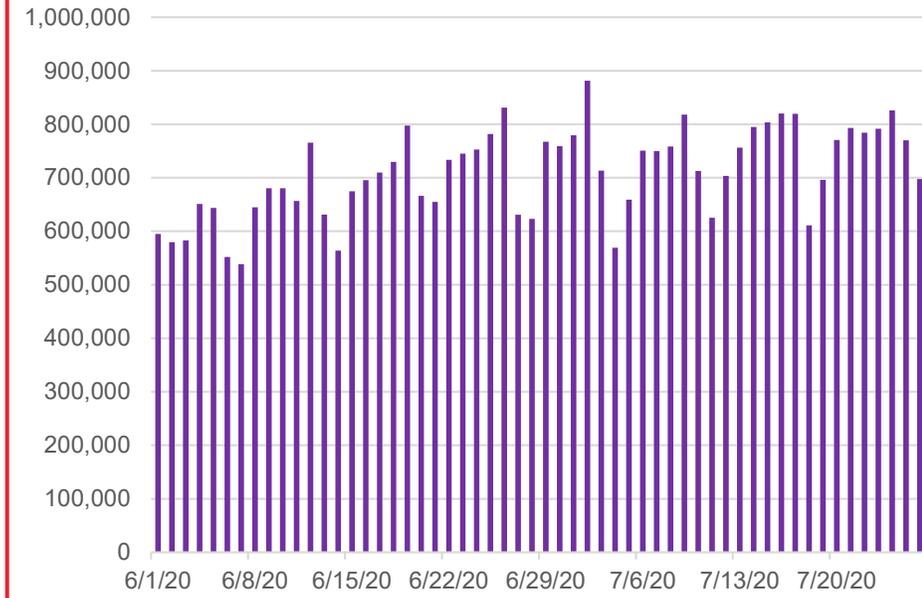
# Traffic

# MTA Bridge and Tunnel Traffic Volumes

Estimated \* MTA Bridge and Tunnel Traffic Counts (March 1- July 26, 2020)



June 1- July 26, 2020



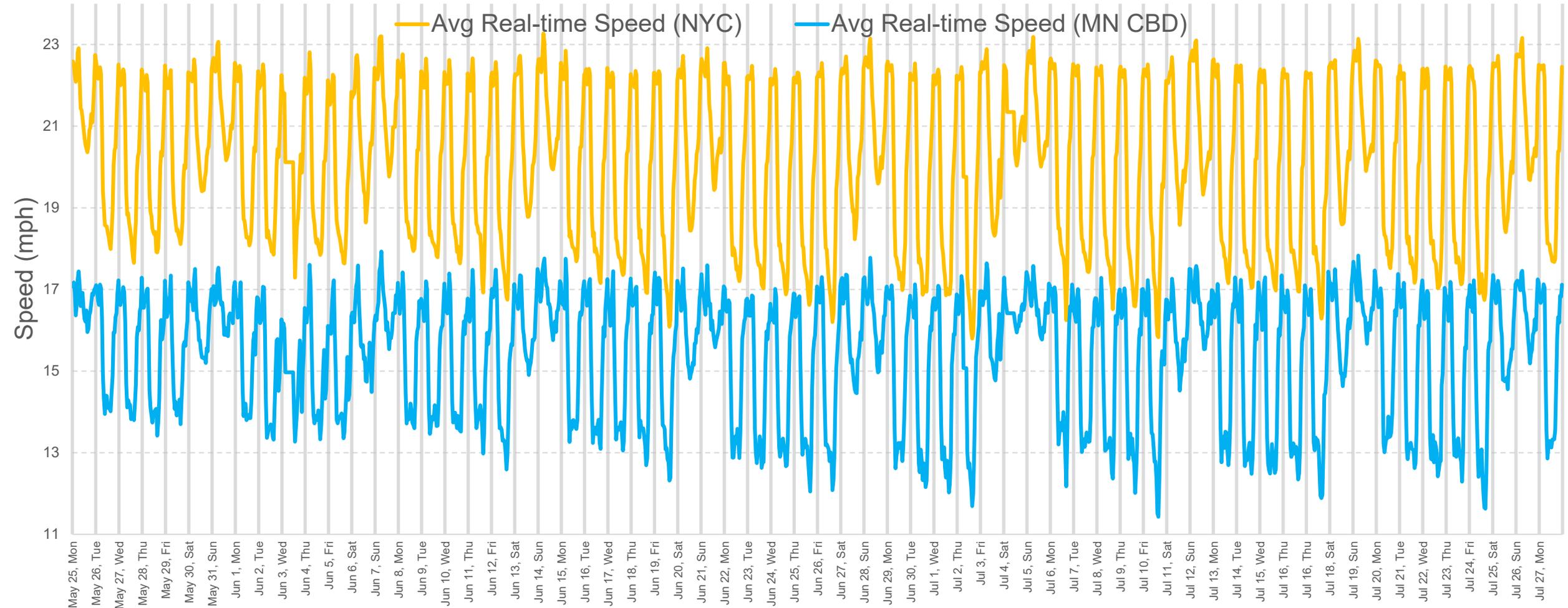
- Total weekday traffic counts during the week of July 20 remained steady compared to the previous week. Weekend traffic counts were up 12 percent.

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.



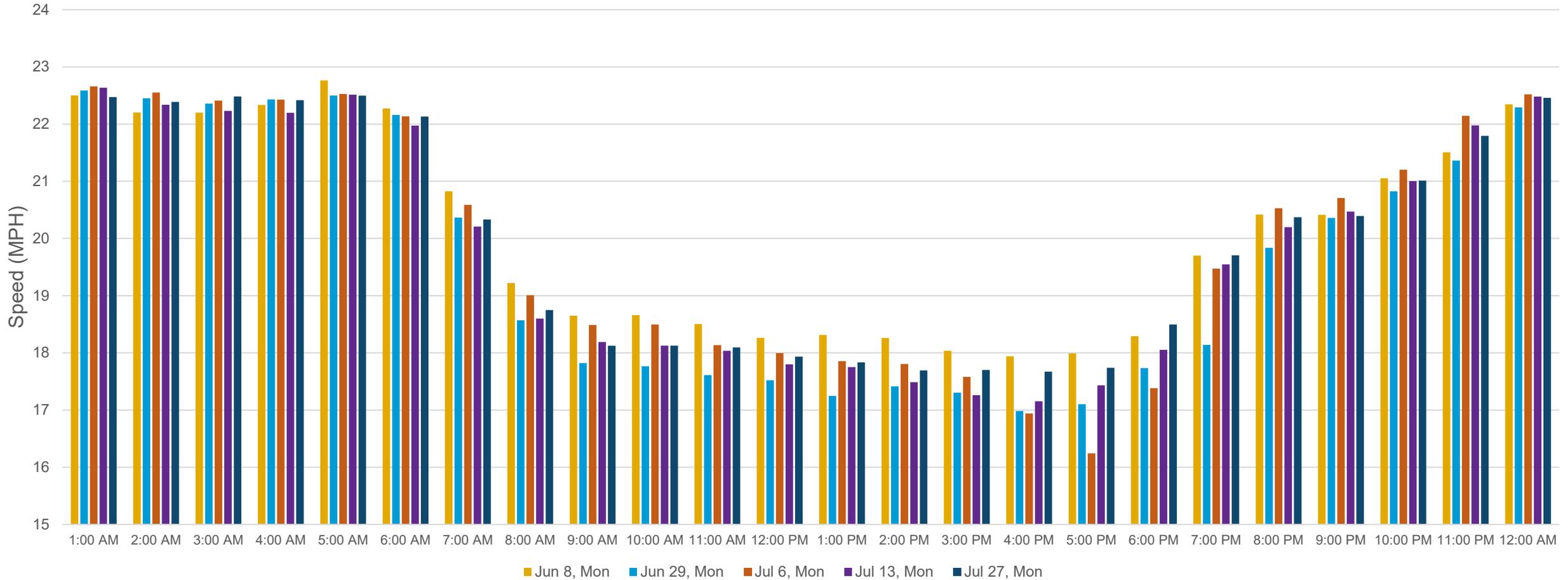
Real-time Traffic Flow Speed by Hour in NYC and MN CBD (May 25 -Jul 27, 2020)



- Average traffic speeds across NYC and within the Manhattan CBD have declined since May, but have been steady through July.
- Since June 8<sup>th</sup>, weekday traffic speeds have followed a consistent trend of slowing as the week progressed.



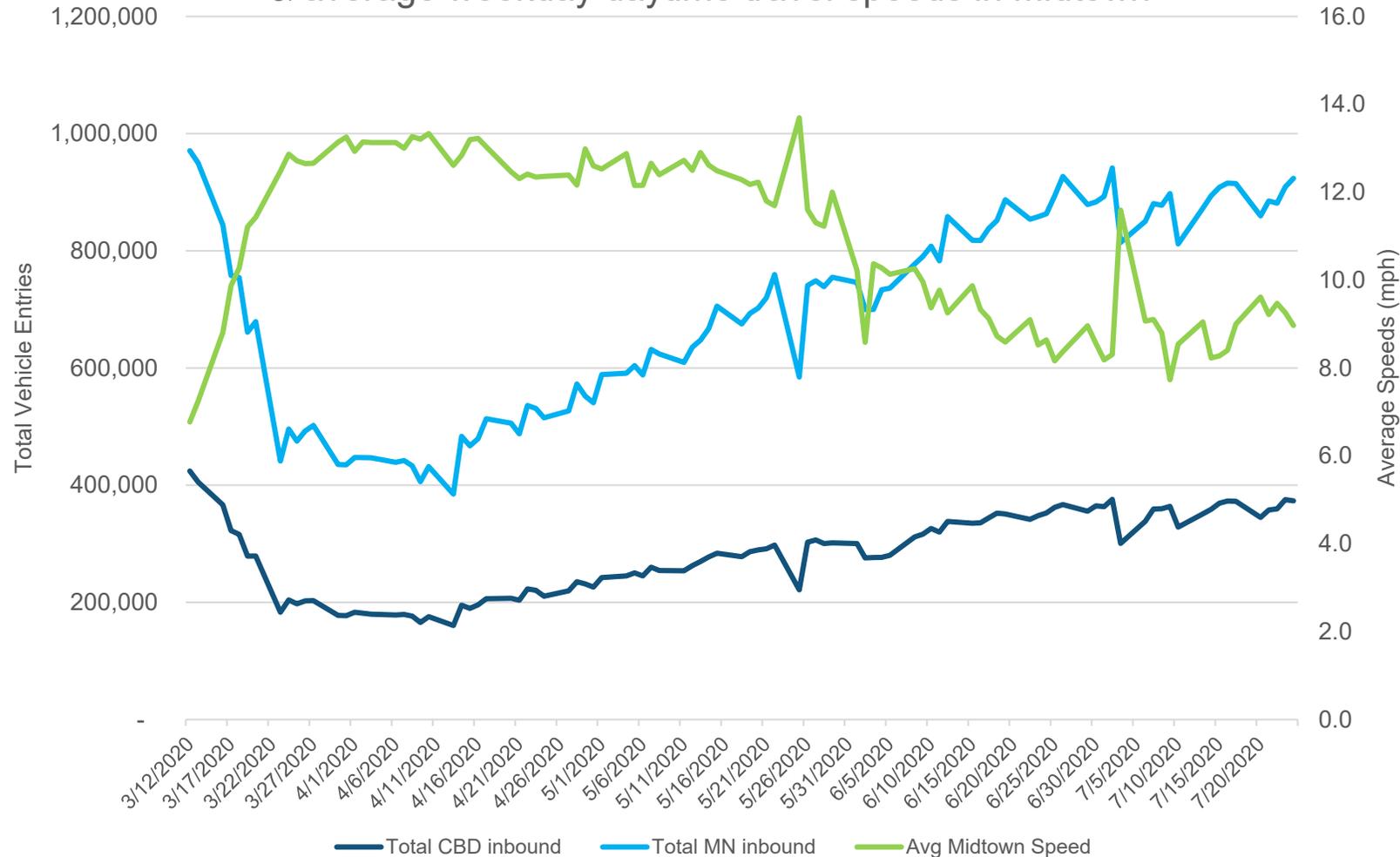
Real-time Traffic Flow Speed by Hour in NYC (Jun 8, Jun 29, Jul 6, Jul 13, Jul 27, 2020)



- Compared to earlier weeks, average hourly traffic flow speeds on Monday, July 27 were generally consistent with the earlier in July, with increases in travel speed occurring during the afternoon hours in recent weeks.

# Manhattan Inbound Traffic

Vehicles entering Manhattan CBD and Manhattan (borough) via river crossings & average weekday daytime travel speeds in Midtown



- After a steep decline in total inbound vehicles into Manhattan and also specifically the CBD in the week leading up to the PAUSE, entries have been increasing since mid-April.
- Over the same time period, weekday daytime speeds in Midtown have been declining.
- The total number of vehicles entering Manhattan on Thursday, July 23 was 94 percent of total entries on Thursday, March 12.
- The total number of vehicles entering the Manhattan CBD on Thursday, July 23 were 88 percent of total entries on Thursday, March 12.
- Exceptions are observed on major holidays, including Memorial Day and Independence Day.

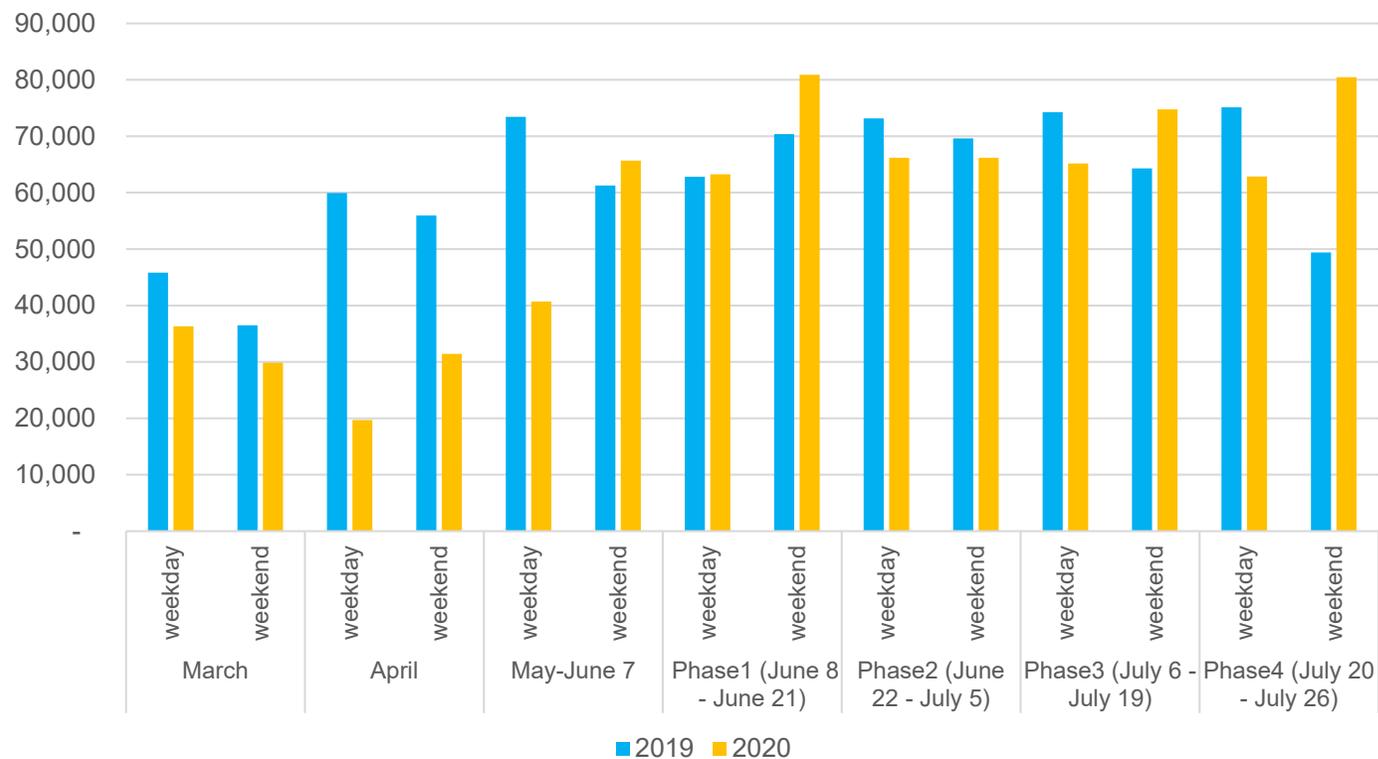
Source: NYCDOT, providing data from NYCTLIC, Port Authority, Triborough Bridge and Tunnel Authority

# Citi Bike

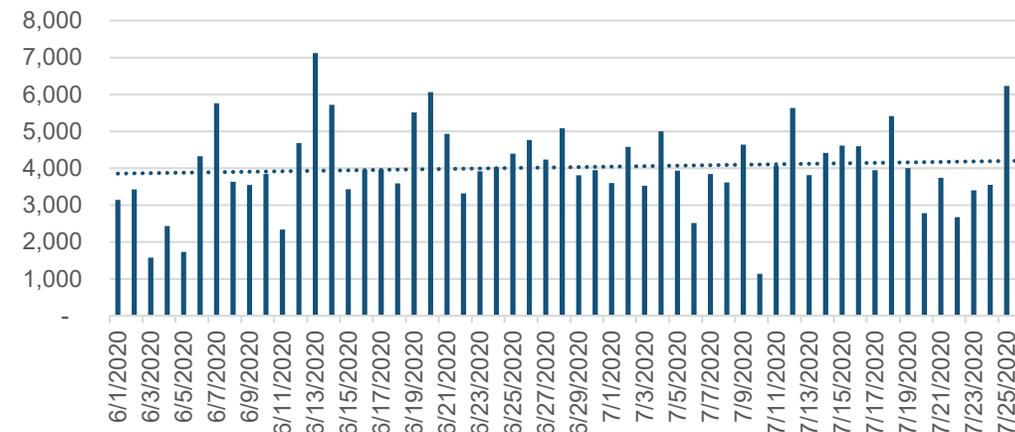
# Citi Bike Ridership

- During June and July 2020, Citi Bike ridership has been fairly consistent with ridership patterns during the same period in 2019.
- Citi Bike ridership on East River bridge crossings has been fairly steady since early June 2020, with peak travel occurring on weekends.
- The percentage of trips taken by Critical Workers has been declining.

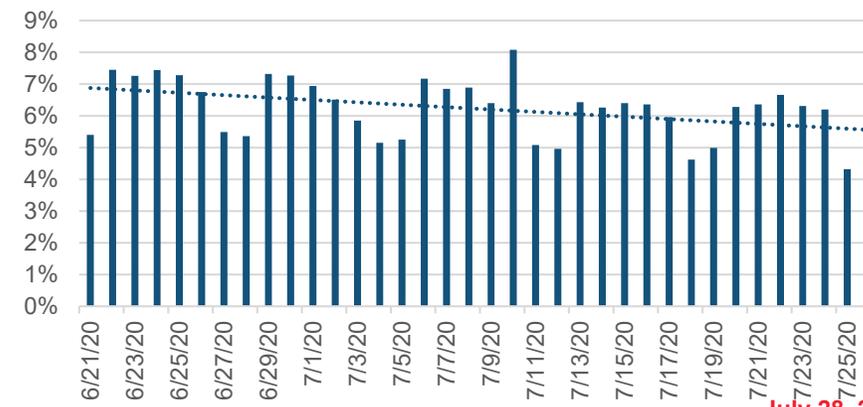
Citi Bike Average Daily Trips 2019 vs 2020 (March-July)



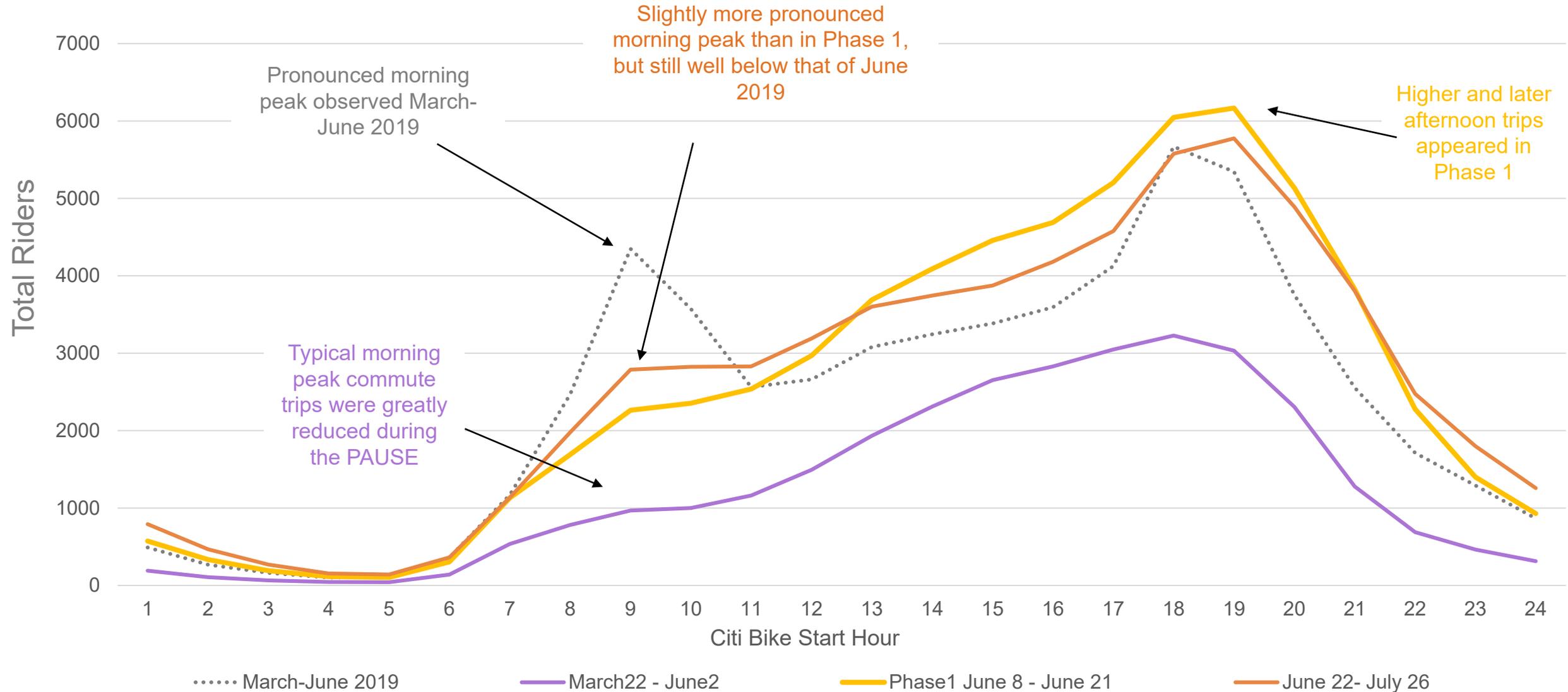
Daily East River Bridge Crossings



Percent of all trips taken by Critical Workers



# Citi Bike Ridership by Time of Day

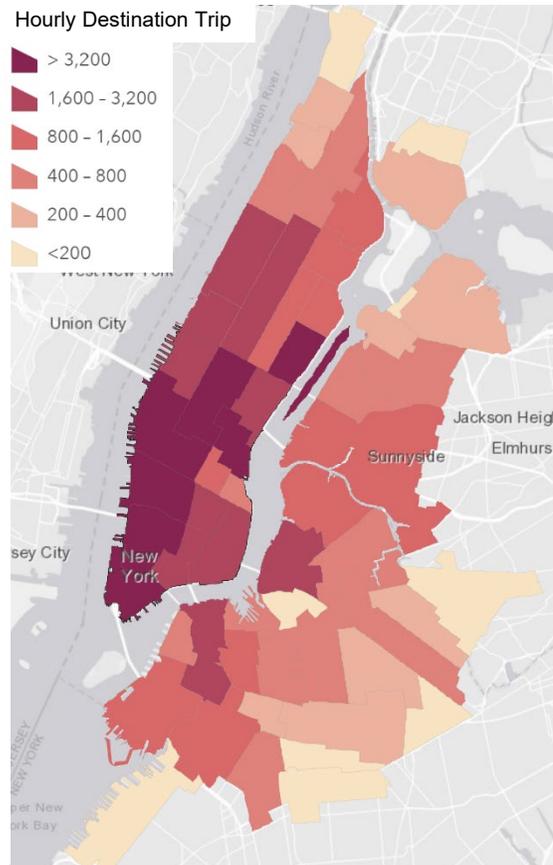


# Citi Bike Destination Ridership By Time of Day Trends

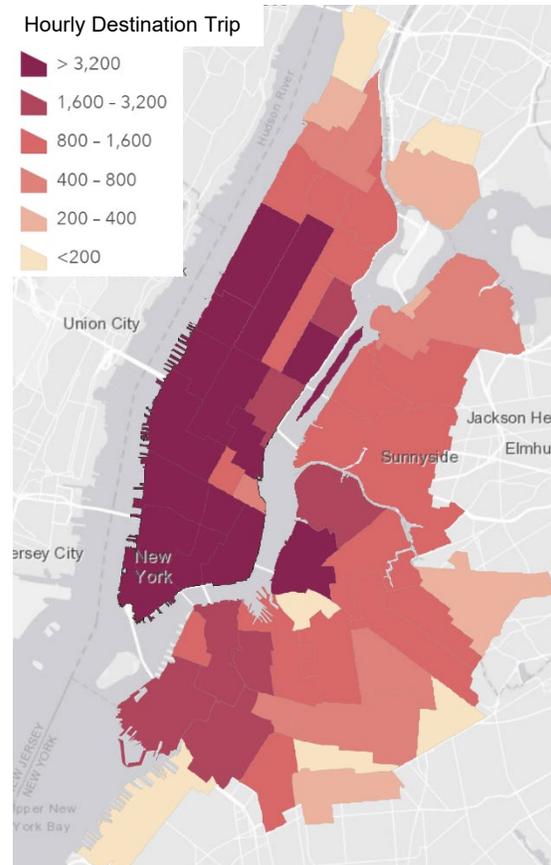
## Average Hourly NTA Destination Trips by time of day 6/22-7/26

- Citi Bike trip destinations vary substantially by time of day.
- Manhattan destinations predominate during the morning and evening hours. These trips include any trip that ends in Manhattan, regardless of origin.

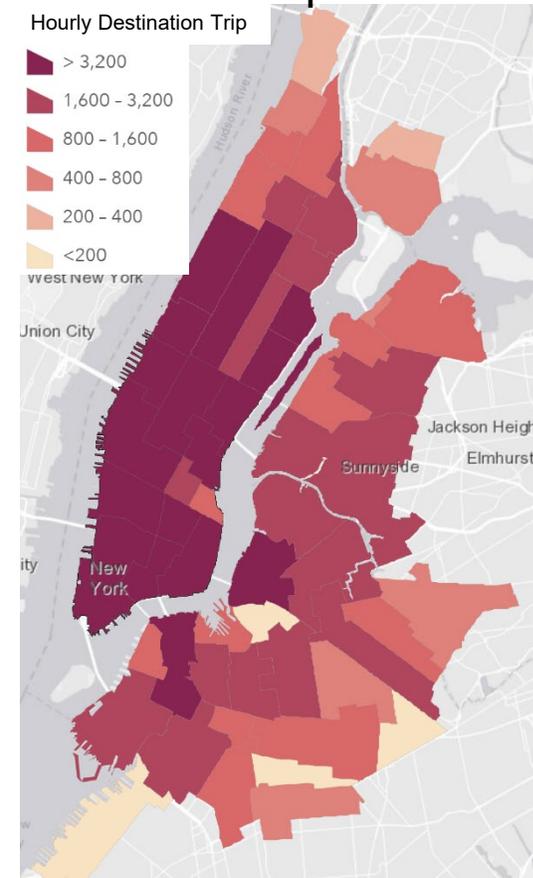
### 6am-10am



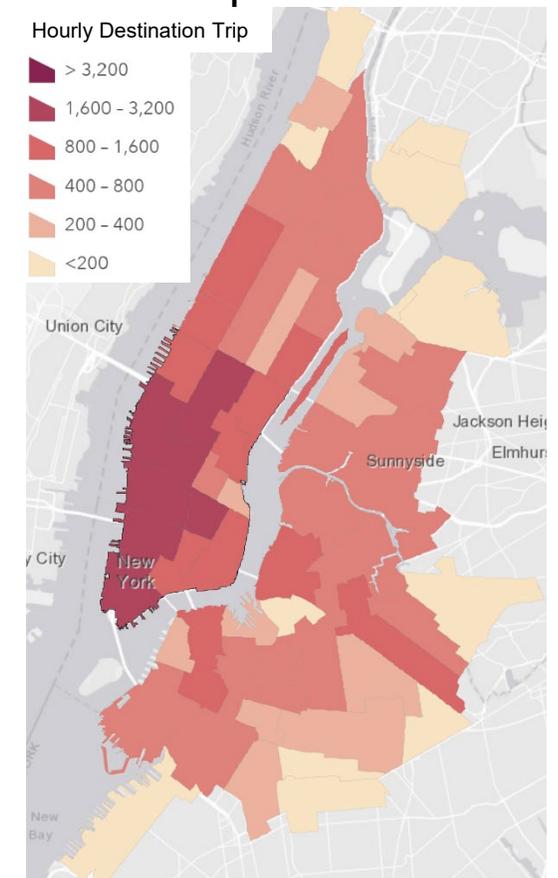
### 10am-4pm



### 4pm-8pm



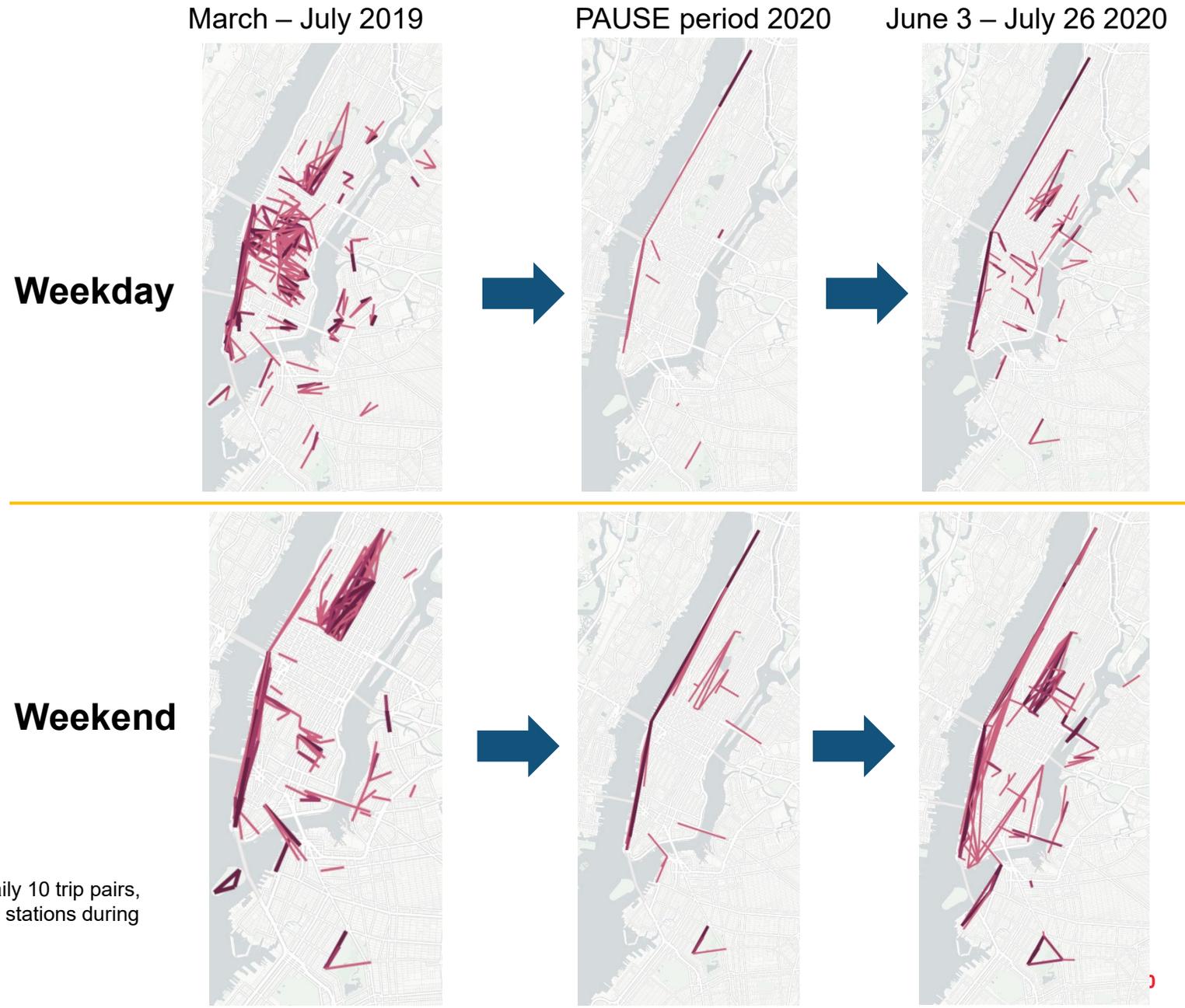
### 8pm-6am



# Citi Bike Ridership Origin-Destination Comparison

## Citi Bike Origin-Destination Ridership\*

- Citi Bike ridership patterns in Spring 2019 show wide variation in origin and destination pairs on weekdays versus weekends.
- Common weekday trips were within the Manhattan Core, and often cross-town.
- Common weekend trips appeared more oriented towards recreational riding, along the west side of Manhattan, and within Central Park.
- During the PAUSE, common trips on both weekends and weekdays were largely reduced to west side origins and destinations, with more Central Park rides occurring on the weekends.
- Since the start of Phase 1, common origin-destination pairings have increased, but still appear to be more recreationally-oriented than pre-pandemic travel.



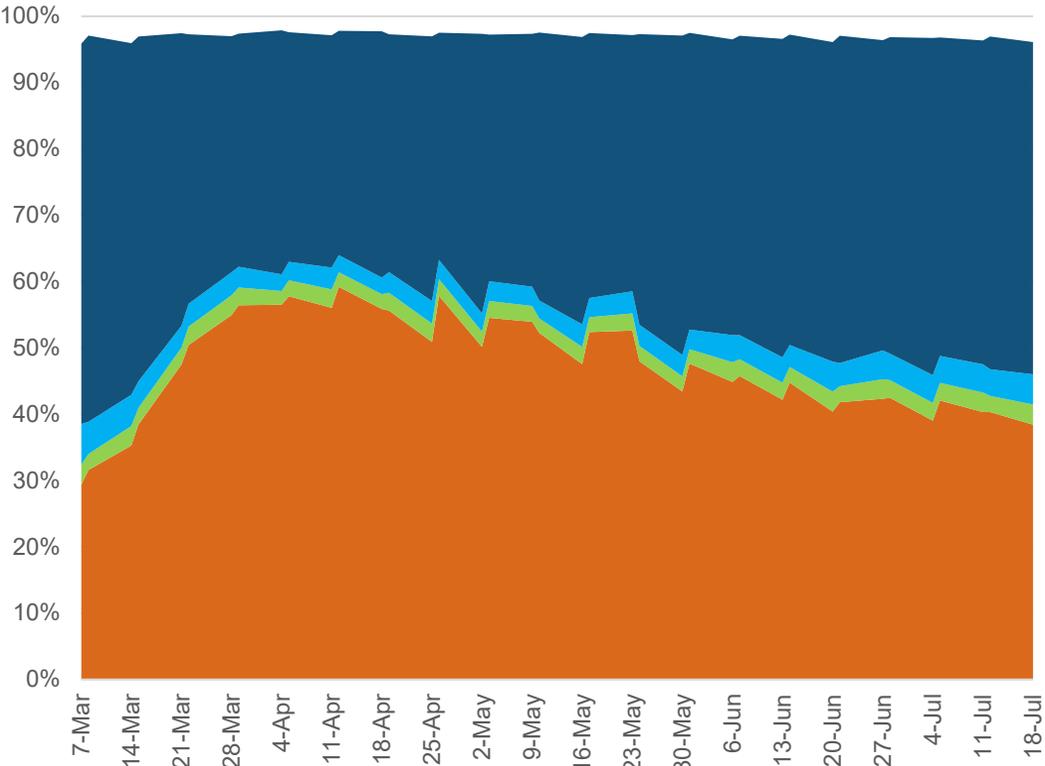
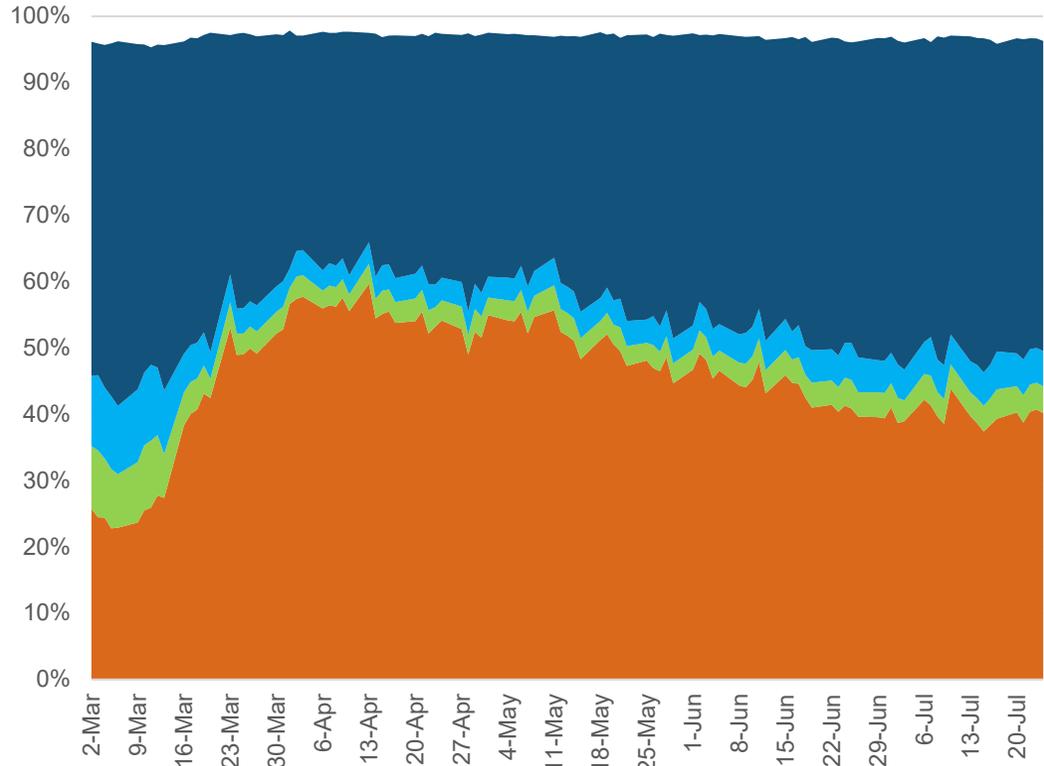
\* Citi Bike Origin-Destination : Origin Destination pairs selected have at least daily 10 trip pairs, and trip duration is greater than 1.5 min and less than 45 mins; New and closed stations during 201903-07 will be considered fully operational

# Cellphone-based Mobility

# Measures of Mobility – Cell Phone Locations

Percent of Devices Out-of-Census-Block-Group (CBG) Visits & Staying at Home in NYC  
(Weekdays During March 1- July 24, 2020)

Percent of Devices Out-of-Census-Block-Group (CBG) Visits & Staying at Home in NYC  
(Weekends During March 1- July 24, 2020)



- Out-of-CBG Visits in Daytime <3 Hrs or Nighttime
- Out-of-CBG Visits in Daytime 3-6 Hrs
- Out-of-CBG Visits in Daytime >6 Hrs
- Stay at Home CBG

- Out-of-CBG Visits in Daytime <3 Hrs or Nighttime
- Out-of-CBG Visits in Daytime 3-6 Hrs
- Out-of-CBG Visits in Daytime >6 Hrs
- Stay at Home CBG

- Travel data by mode as analyzed on previous slides demonstrate increasing weekend mobility with somewhat plateaued weekday mobility.
- SafeGraph, a company that generates data by pinging mobile devices throughout the day to determine their locations, indicates a very slight decrease in the number of devices “staying at home” on weekends, with a flattening trend on weekdays.

# Timeline



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

- March 1<sup>st</sup>, 2020: **First confirmed case** in New York <https://www.wsj.com/articles/first-case-of-coronavirus-confirmed-in-new-york-state-11583111692>
- March 7<sup>th</sup>, 2020: Governor Cuomo **declares state of emergency** <https://www.nytimes.com/2020/03/07/nyregion/coronavirus-new-york-queens.html>
- March 12<sup>th</sup>, 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 15<sup>th</sup>, 2020: **NYC school closures announced**. <https://www.nytimes.com/2020/03/15/nyregion/nyc-schools-closed.html> DeBlasio announces the **closure of schools, bars, and restaurants** (except takeout/delivery) effective the morning of the 17<sup>th</sup> <https://www.nytimes.com/2020/03/15/nyregion/new-york-coronavirus.html>
- March 18<sup>th</sup>: Governor Cuomo announces that **50% of non-essential employees** must work from home
- March 20<sup>th</sup>: Governor Cuomo announces **statewide stay at home rules**, effective the evening of the 22<sup>nd</sup>. **100% of non-essential workers** must stay home. <https://www.npr.org/sections/coronavirus-live-updates/2020/03/20/818952589/coronavirus-n-y-gov-cuomo-says-100-of-workforce-must-stay-home>, travel on transit only when necessary
- March 25<sup>th</sup>: MTA announces service reduction to **Essential Service** plan <https://abc7ny.com/6047040/>
- March 27<sup>th</sup>: The Governor halts **non-essential construction** <https://thecity.nyc/2020/03/cuomo-calls-off-non-essential-construction-statewide.html>
- May 1<sup>st</sup>: Mayor de Blasio announces first seven miles of streets in **Open Streets NYC** program. <https://gothamist.com/news/de-blasio-reveals-first-batch-open-streets-primarily-centered-parks>
- May 6<sup>th</sup>: Governor Cuomo enacts nightly 1am-5am subway shutdowns: <https://www.nytimes.com/2020/04/30/nyregion/subway-close-cuomo-coronavirus.html>
- May 22<sup>nd</sup>: Mayor de Blasio announces 45 miles of **open streets**, the most in the nation, with the City to eventually reach 100 miles. <https://www.6sqft.com/nyc-full-list-of-open-streets-summer-2020/>
- May 26<sup>th</sup>: New York Stock Exchange reopens trading floor after 2 month closure. <https://www.npr.org/sections/coronavirus-live-updates/2020/05/26/862082828/new-york-stock-exchange-reopens-trading-floor-after-2-month-closure>
- May 29<sup>th</sup>: Governor Cuomo announces that New York City is expected to **begin Phase 1 of reopening on Monday, June 8<sup>th</sup>**. <https://www.nytimes.com/2020/05/29/nyregion/coronavirus-new-york-live-updates.html>
- June 1<sup>st</sup>: 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 96<sup>th</sup> street, and Citi Bike is shut down during curfew hours. <https://deadline.com/2020/06/new-york-city-curfew-andrew-cuomo-george-floyd-protests-1202948548/>
- June 5<sup>th</sup>: 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 7<sup>th</sup>: Mayor de Blasio announces the end of protest-related curfews ahead of schedule, effective immediately. <https://www.cbsnews.com/news/nyc-mayor-announces-curfew-has-ended-ahead-of-schedule-2020-06-07/>



# New York COVID19 Pandemic Timeline: Phase 1 to Present

- June 8<sup>th</sup>: New York City begins **Phase 1 of re-opening**. Manufacturing, non-essential construction, and non-essential retail via curbside pickup can resume operations <https://www.nytimes.com/2020/06/08/nyregion/coronavirus-nyc-reopen-phase-1.html>
- 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 14<sup>th</sup> Street Busway, which will be made permanent. More bus lanes will be added along major corridors. <https://www.politico.com/states/new-york/albany/story/2020/06/08/as-city-reopens-de-blasio-expands-transit-options-1291796>
- June 14<sup>th</sup>: Governor Cuomo issues a statement that the state **may reverse the reopening process** in regions where the state’s reopening plan—particularly social distancing and mask use—are **not being followed**.
- June 18<sup>th</sup>: 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.nyc.gov/office-of-the-mayor/news/449-20/open-restaurants-new-york-city-prepares-phase-2-reopening-mayor-de-blasio-announces>
- June 19<sup>th</sup>: 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.cbsnews.com/news/andrew-cuomo-new-yorkers-united-coronavirus-pandemic-crisis/>
- June 22<sup>nd</sup>: 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://www.ny1.com/nyc/all-boroughs/news/2020/06/21/what-exactly-does-phase-two-reopening-mean-for-new-york-city->
  - 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 states who are experiencing a rapid rise in Covid cases. <https://nypost.com/2020/06/22/gov-cuomo-talks-to-nj-connecticut-about-florida-quarantine-rules/>
  - 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 15<sup>th</sup>**. 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 24<sup>th</sup>: 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](https://coronavirus.health.ny.gov/system/files/documents/2020/06/interimguidance_traveladvisory.pdf)
- June 29<sup>th</sup>: 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 6<sup>th</sup>, **the reopening of indoor dining may be delayed** due to ongoing coronavirus concerns. Governor Cuomo echoed these concerns. <https://abc7ny.com/indoor-dining-in-nyc-new-york-city-reopen-coronavirus/6280941/>
- July 6<sup>th</sup>: 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.
  - 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 20<sup>th</sup>: 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://www.nytimes.com/2020/07/20/nyregion/nyc-phase-4-reopening-coronavirus.html>