

December 2019

Bike NYC Trends

Bike Riding is Alive and Well Between Brooklyn & Queens

Study of the **Pulaski Bridge** bike path by Bike New York is one of the first observational and quantitative analyses of bike riding in NYC outside of Manhattan

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- The Pulaski Bridge bike path, opened by NYC DOT in April 2016 by converting a motor vehicle lane on the bridge, in a big success.
 - The city counted an average 99 bikes per hour in a 12-hour count on the bridge's pedestrian path in April 2013. This November, Bike New York found 142 bikes per hour in peak commuting times and 53 bikes per hour in non-peak times. The bike/pedestrian conflicts that were commonplace on the pedestrian path prior to 2016 have been eliminated.
 - Purely motorized vehicles are in the bike path on a regular basis. Planning and enforcement officials should monitor this usage for any emerging safety problems.
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Placeholder photo/this draft

The privately-owned muscle-powered bicycle is not under threat of eclipse by ebikes or bike share in New York, according to bike counts and observations made by Bike New York on the Brooklyn-Queens Pulaski Bridge during a set of weekdays prior to Thanksgiving.

Bike New York found 142 bikes per hour using the bike path in both directions in over six hours of counts during peak commuting periods, and 53 bikes per hour in 2 hours of counting non-peak times. That compares to an April 2013 NYC DOT 12-hour count that found 99 bikes per hour prior to establishment of separate walking and cycling paths on the bridge in 2016. Both April and November are transitional cycling months between the May-October peak season and colder winter months.

21% of the bicycles observed were CitiBikes. That is a lower CitiBike share of bike traffic than some Manhattan bicycle counts have found, though the CitiBike portion of bike crossings during some peak hours on the Pulaski Bridge was closer to the findings of Manhattan counts.

Bike counts on the bridge would likely be higher with better bike network connections in Greenpoint and especially in Long Island City, where the Pulaski Bridge bike path opens into a very busy and complex set of street intersections.

Traffic analysts and officials in New York typically consider peak hours as 7-10 a.m. and 4-7 p.m.

The Pulaski Bridge count is part of a broader effort by Bike New York to understand bike usage trends in New York. Some of the city's traditional bike use metrics are down, while some newer counts have increased.¹

Purely motorized vehicles such as e-scooters and Revel mopeds have a regular presence in the bike path. These vehicles made up 7.2% of all observed crossings of the bridge that used the bike path.

¹ The oldest bike use tracking metric in NYC is East River Bridge crossings. They peaked in 2016 and have declined the following two years. A NYC Health Dept survey shows a similar drop in 2017. But CitiBike use has increased in the last few years, and a NYC DOT bike count at 50th Street in Manhattan showed substantial increases in 2017 and 2018. *Cycling in the City: Cycling Trends in NYC*. NYC Dept of Transportation 2019

Direction of Travel

Bike traffic on the bridge during peak hours exhibits a consistent “tidal flow” toward Queens in the morning and toward Brooklyn in the evening. Morning peak counts all found over 75% of bikes headed from Brooklyn to Queens, with a high of 82% in an 8:30–9:30 a.m. count. Likewise, evening peak counts found over 70% of bike crossings bound for Brooklyn. Our overall sample counted more Queens-bound bikes overall than Brooklyn-bound (525 vs 435).

Conversely, non-peak counts showed a balance in direction of travel, with only a small percentage separating Queens- and Brooklyn-bound bike

Bikes direction of travel, peak and non-peak

	Queens-Bound	Q-bound percentage	Brooklyn-Bound	B-bound percentage
A.M. Peak	362	79.2%	95	20.8%
P.M. Peak	106	26.8%	290	73.2%
Non-peak	57	53.3%	50	46.7%

counts. A likely reason for the directional nature of peak travel is north Brooklyn bike commuters riding to the Queensboro Bridge to reach upper Midtown Manhattan and nearby areas, and CitiBike and other riders riding to Long Island City subway stations (unusually for a NYC subway station, NYC DOT has installed a significant number of CityRack bike parking spots at the Vernon–Jackson subway station).

Bike volume was somewhat lower in the early peak hours (7–8 a.m. and 4–5 p.m.) than in the remainder of the peak periods, with a high of 191 bikes during an 8–9 a.m. count (see overall count data page 9).

CitiBike

CitiBike trips were 21% of observed bike trips. CitiBike use of the Pulaski Bridge exhibited the strong peak-period characteristics that have been noted for the bike share program in previous counts. In a 2015 observation in Midtown Manhattan, Transportation Alternatives noted that “CitiBike trips are a peak commuting-time phenomenon” with over twice the usage in peak periods than non-peak.² This was even more pronounced in our study

² *Fifth and Sixth Avenue Bicycle and Traffic Study*. Transportation Alternatives, 2015 https://www.transalt.org/sites/default/files/news/reports/2015/TransAlt_5th_6th_Avenue_Report.pdf

CitiBike share of total bike traffic by time of day

	CitiBike percentage of all bikes	CitiBikes per hour
Travel peak	22.2%	31.5
Non peak	15.0%	8

of the Pulaski, with nearly four times as many CitiBikes counted per peak hour versus non-peak hours.

The CitiBike share of all bike traffic we observed was not inconsistent with other studies, whose findings have ranged from over 35% to 21% over different parts of Manhattan during the past six years, though tended toward their lower findings.³ Our look at the Pulaski is an interesting look

Other studies & counts: CitiBikes share of bike traffic

Source	Area	CitiBike %	Count dates
Hunter College	14th-86th Sts Manhattan	27.1%	April 2019
TransAlt	5th & 6th Aves Midtown	25.8%	Summer, 2015
City Planning	East Village	21%	Fall 2013-2015
City Planning	5th Ave & 14th St	30.3%	Fall 2013-2015
City Planning	West Midtown	35.3%	Fall 2013-2015
Hunter College	Manhattan south of 86th St	23.2%	Summer/Fall 2013
NYC DOT	Manhattan CBD	29%	August 2013

relative to these studies as the first measurement of its kind outside of Manhattan. Of the counts/observations we are aware of, only

³ *The Riding Behavior of Cyclists in Manhattan: An Update* Milczarski & Tucker, Hunter College 2019 <http://www.hunter.cuny.edu/communications/repository/files/silo-docs/Riding-Behavior-Cyclists-Hunter-College.pdf>; “NYCDCP Manhattan Bike Counts,” NYC Dept of City Planning 2016 <https://www1.nyc.gov/site/planning/data-maps/open-data/dwn-bikecounts.page>; *Bike Lanes + Bike Share Program = Bike Safety*, Milczarski & Tucker, Hunter College 2014 http://silo-public.hunter.cuny.edu/62eaab1fad6c75d37293d2f2f6504a15adacd5c6/Cycling_Study_January_2014.pdf; “After First 200 Days of Citi Bike, NYC DOT Releases New Data” (press release), NYC Dept of Transportation, 2013 <https://www1.nyc.gov/html/dot/html/pr2013/pr13-067.shtml>

Transportation Alternatives' 2015 look at 5th and 6th Avenues and our present count on the Pulaski Bridge specified times of day and distinguished between peak and non-peak counts.

CitiBike “tidal” flow in travel peak

	Queens-bound CitiBikes	Brooklyn-bound CitiBikes
A.M. Peak	87	20
P.M. Peak	20	62

In keeping with the directional nature of Pulaski Bridge commute-time bike traffic, CitiBike trips in the morning peak were overwhelmingly from Brooklyn to Queens, and in the reverse direction in the evening peak. One likely reason for this is that CitiBike is heavily used to bring Greenpoint and perhaps other north Brooklyn commuters to subway lines in Queens in the morning, and back from those subways in the evening (Greenpoint has no subway line that runs directly to Manhattan).

Motorized vehicles in the bike path

Fully motorized vehicles (not electric-assist bicycles which we observed and classified as bicycles) we counted in the Pulaski Bridge bike path included electric scooters, electric and gas powered mopeds, Revel shared mopeds, one-wheel electric skateboards, throttle ebikes with non-pedaling riders, a dirt bike and a Segway. Fully motorized vehicles made up 7.2% of all bridge crossings using the bike path.

Motorized vehicles in the bike path appeared to be both commercial and commuter traffic and did not exhibit any pattern of heavier presence during specific times of day that distinguished it from bicycle traffic. The highest share of motor traffic during a one hour count was 13.4% during the early evening peak (4-5pm), with the low share at 3.7% in the middle of the morning peak.

Motorized vehicles are not legally allowed in NYC bike lanes/paths today. Most motorized users of the path were traveling at speeds consistent with bicycle traffic. But a number of e-scooter, Revel and ebike riders were “flooring” their devices, creating speed differentials with bike riders that could create safety problems or make bike riders less comfortable using

Motorized vehicles in the Pulaski Bridge bike path

Total bike path crossings	Total bikes	Total motorized vehicles in path	Motor %
1035	960	75	7.2%

the path. We have observed growth of similar uses on the Williamsburg and Queensboro Bridges. City officials should monitor safety trends on dedicated bike paths like the Pulaski for any incipient problems.

Drawbridge dynamics

We abandoned one evening peak count when the Pulaski drawbridge opened for Newtown Creek marine traffic. Upon reflection, we continued a later count when the bridge opened again. Since NYC DOT does not provide any notice of bridge opening, open it according to a schedule, and because the next crossing of Newtown Creek would represent a time-losing detour for bike riders confronting the open Pulaski, we concluded that an open drawbridge would not reduce the hourly count of would-be Pulaski Bridge bike riders, but only cause part of the count to be more concentrated. We witnessed no “turn-back” activity from our counting point on the Brooklyn side of the path that evening.



Queens-bound bike riders stack up during a Pulaski drawbridge opening, August 2019

Pulaski Bridge automated bike counter?

While this is the first NYC bike count analysis we know of not based in Manhattan (or on bridges leading to/from Manhattan), it's possible that NYC DOT a wealth of unreleased Pulaski Bridge bike data. DOT has installed in-pavement bike counters in a variety of bike lanes and paths, including at the Queens entry to the Pulaski Bridge (the cross-hatched marking shown in the photo next page). DOT has never released a single data point from the Pulaski counter. We don't know if the agency has some reason for

keeping the information under wraps or if the counter is even hooked up and working.



A February 2019 letter from Bike New York to Transportation Commissioner Trottenberg urging an open release of all data generated by automated bike counters in the city has never been answered. Our purpose in conducting these counts is to gain better understanding of some of the conflicting trends that the city's few sources of bike riding data have presented for the past several years. DOT could further such understanding and advance its own goal of increasing bike use in New York City by making its bike counts publicly accessible.

Recommendations

Bike network

Further bike traffic growth on the bridge could be fueled by better bike network connections, particularly on the Queens side. Bike riders entering or exiting the Pulaski Bridge must navigate busy Jackson Avenue and complex intersections caused by Jackson's junction with 49th Avenue and 11th Street.

We suspect the direction of peak direction of travel on the bridge is related to north Brooklyn bike commuters riding to upper Midtown via the Queensboro Bridge (as well as Queens subway-destined riders). A protected bike lane route between the Pulaski and Queensboro Bridges would certainly boost bike use of the former. Extension of the Skillman Avenue protected bike lane to 49th Avenue would also create a direct route to the Pulaski from Sunnyside and Woodside. Bike advocates and City Council Member Jimmy Van Bramer have proposed a thorough protected bike network for Long Island City.⁴

Brooklyn Waterfront Greenway improvements such as connecting the West Street bike path to the area near the bridge via a bike path on Commercial Street, and fixing the failing path design on West Street so that it becomes a reliable through route, would lead to higher bike traffic between north Brooklyn and western Queens. Further south, establishing a protected bike lane link between Kent Avenue and West Street would facilitate easy bike trips between the Pulaski Bridge and Williamsburg.

CitiBike

Add capacity at CitiBike stations at the Vernon Jackson and Hunters Point Avenue #7 subway stations. More docking points would raise the ceiling that full docking stations currently impose on CitiBike bike-and-ride trips from north Brooklyn to the #7 train.

Data and understanding bike transportation in New York City

NYC DOT should make bike counts from the Pulaski Bridge and all automated bike counters a continually updating open data source (via application programmer interface), as Bike New York has urged the agency

⁴ "Councilman wants to make Long Island City NYC's most bike-friendly neighborhood." NY Daily News, July 31, 2019. <https://www.nydailynews.com/new-york/ny-jimmy-van-bramer-long-island-city-bike-lanes-proposal-20190731-tp4wcdlzqfacnce3y4ejmkpig4-story.html>

to do since February 2019. Additionally, DOT should issue a summary of Pulaski Bridge bike counts since the automated counter was installed in 2016.

Safety of mixed motorized + bike traffic

Monitor the path for safety regarding motorized vehicles using the bike path, publicize any problems that become apparent.

Bike New York Pulaski Bridge bike count November 2019

Date, time	Duration (hours)	QB other bikes	BB other bikes	QB CitiBikes	BB CitiBikes	QB motor	BB motor	Total crossings	Total bikes	Total all bikes	Total QB all bikes	Total all bikes	Total CitiBikes	Total motor	CitiBike % of bikes	Motor % of crossings	BB % of bikes	Weather
Peak																		
Nov 19 5pm	1	33	80	9	29	8	7	166	151	42	109	38	15	15	25.2%	9.0%	72.2%	pc 46F
Nov 20 8:30PM	1	100	21	30	7	4	2	164	158	130	28	37	6	6	23.4%	3.7%	17.7%	c 42F
Nov 21 8am	1	109	34	40	8	9	3	203	191	149	42	48	12	12	25.1%	5.9%	22.0%	su 41F
Nov 21 6pm	1	31	97	9	24	8	6	175	161	40	121	33	14	14	20.5%	8.0%	75.2%	pc 50F
Nov 25 4:10PM	1	22	51	2	9	4	9	97	84	24	60	11	13	13	13.1%	13.4%	71.4%	clear 52F
Nov 26 7am	1	66	20	17	5	1	5	114	108	83	25	22	6	6	20.4%	5.3%	23.1%	clear 43F
Non peak																		
Nov 25 12:30PM	1	23	20	4	4	2	1	54	51	27	24	8	3	3	15.7%	5.6%	47.1%	su 52F
Nov 26 10am	1	23	25	7	1	3	3	62	56	30	26	8	6	6	14.3%	9.7%	46.4%	su 51
Totals	8	407	348	118	87	39	36	1035	960	525	435	205	75	75	21.4%	7.2%	45.3%	