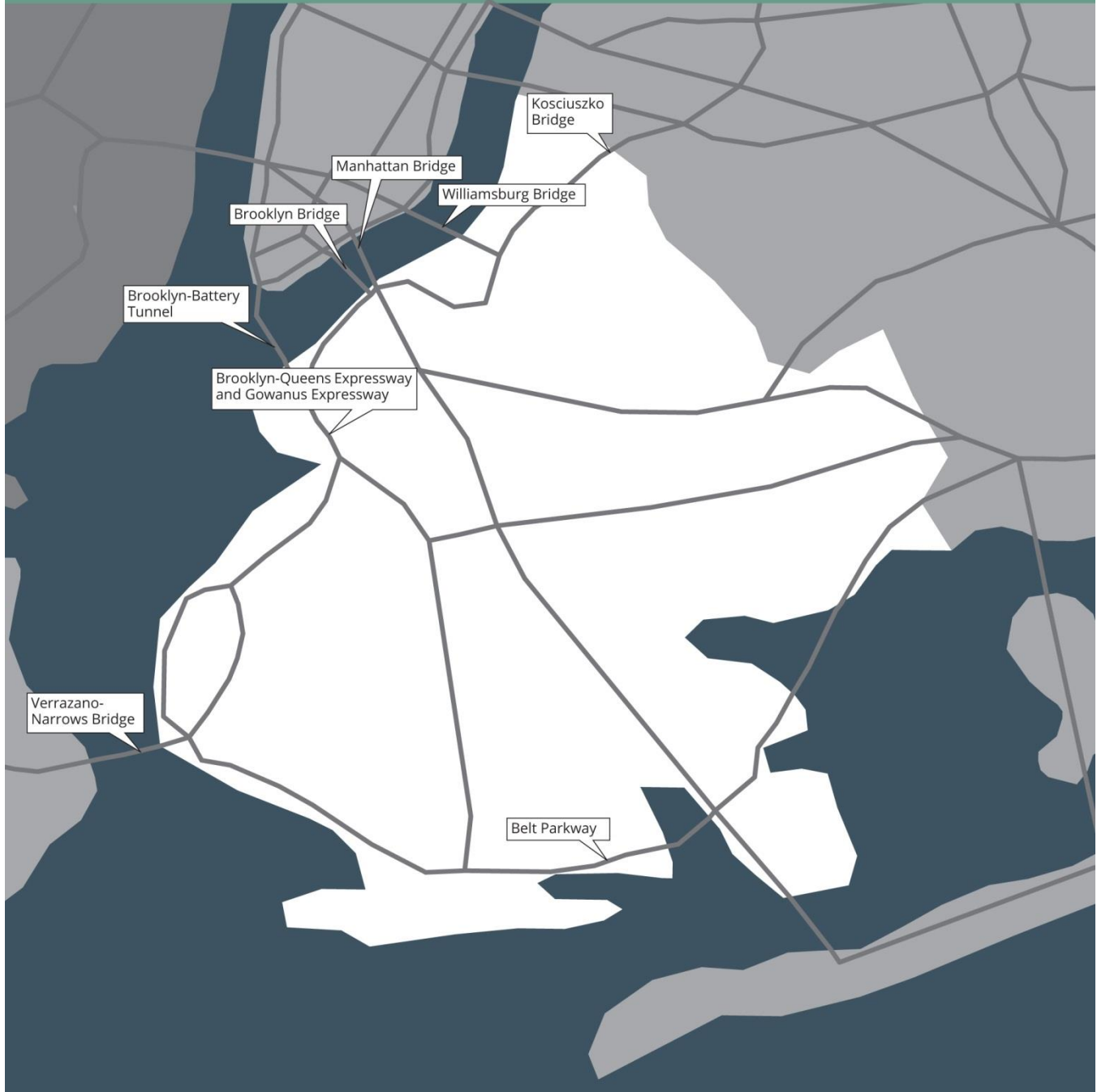


6.2 Brooklyn

Major Portals and Roadways

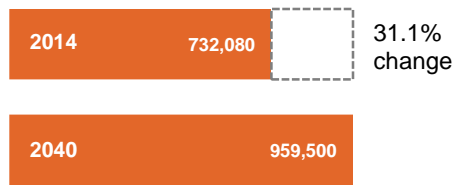


Population and Travel Characteristics

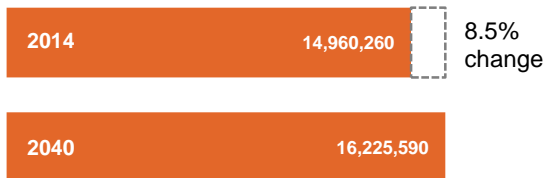
Population



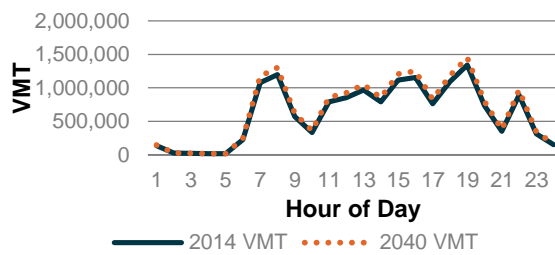
VHD Daily Totals



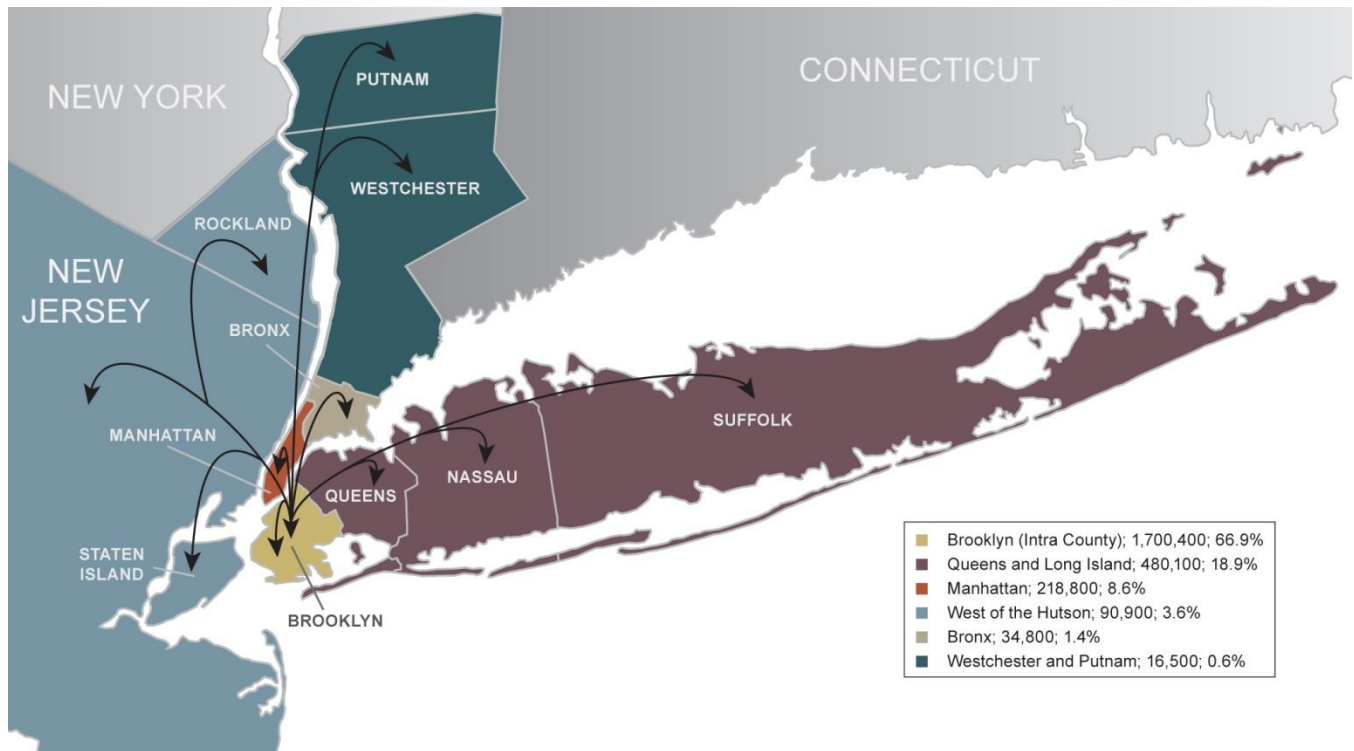
VMT Daily Totals



Brooklyn 24-hour VMT



Two-Way Trips between The Bronx and Other Counties in the New York Metro Area



New York Metropolitan Transportation Council

Performance Measures County (Borough): Kings (Brooklyn)

Scenario 2014

Facility Type	D/C	0.8<= D/C<=1	D/C>1	LMC	TTI	ATS	VHD	PHD	VMT
AM Period (6 to 10 AM)									
Freeway	0.66	13%	21%	242.3	1.46	35.3	14,576	21,573	889,438
Arterial	0.46	7%	9%	562.7	1.73	13.9	141,654	209,648	1,756,137
Local	0.39	8%	3%	9.0	1.11	17.7	5,103	7,552	539,740
PM Period (4 to 8 PM)									
Freeway	0.29	2%	7%	106.2	1.20	38.7	13,771	20,381	641,146
Arterial	0.17	1%	3%	358.6	1.35	18.2	170,351	252,119	1,250,458
Local	0.11	1%	0%	2.5	1.02	18.8	1,490	2,206	269,221
Daily Total									
Freeway	0.55	10%	15%	837.3	1.32	36.6	51,351	75,999	3,985,265
Arterial	0.39	6%	7%	2579.0	1.60	15.1	656,372	971,431	8,393,651
Local	0.32	6%	2%	39.6	1.09	17.9	24,356	36,048	2,581,344
Total							732,079	1,083,477	14,960,259

Scenario 2040

Facility Type	D/C	0.8<= D/C<=1	D/C>1	LMC	TTI	ATS	VHD	PHD	VMT
AM Period (6 to 10 AM)									
Freeway	0.70	12%	24%	279.9	1.55	34.0	18,888	27,955	981,158
Arterial	0.52	8%	12%	708.8	1.88	12.8	189,349	280,237	1,882,335
Local	0.47	12%	7%	17.2	1.15	16.0	8,719	12,904	599,355
PM Period (4 to 8 PM)									
Freeway	0.32	3%	7%	125.8	1.22	38.0	16,068	23,780	743,891
Arterial	0.18	1%	3%	406.7	1.41	17.2	212,093	313,898	1,314,241
Local	0.12	1%	1%	3.5	1.03	17.5	3,065	4,536	293,529
Daily Total									
Freeway	0.59	11%	18%	1053.4	1.39	35.5	67,451	99,828	4,447,938
Arterial	0.43	8%	9%	3328.2	1.72	14.0	853,391	1,263,018	8,938,915
Local	0.38	7%	5%	69.3	1.12	16.4	38,655	57,210	2,838,740
Total							959,497	1,420,056	16,225,594

D/C = Demand to Capacity; LMC = Lane Miles of Congestion; TTI = Travel Time Index; ATS = Average Travel Speed; VHD = Vehicle Hours of Delay; PHD = Person Hours of Delay; VMT = Vehicle Miles Traveled

Note: D/C = average Demand to Capacity for the particular facility type and period. The "0.8<=DC<=1" and "D/C>1" are the percent of travel that occurs in various conditions (somewhat congested and very congested).

Percentage Difference Between 2040 and 2014 Performance Measures

Facility Type	D/C	0.8<= D/C<=1	D/C>1	LMC	TTI	ATS	VHD	PHD	VMT
AM Period (6 to 10 AM)									
Freeway	6%	–	–	15%	6%	-4%	30%	30%	10%
Arterial	13%	–	–	26%	9%	-8%	34%	34%	7%
Local	21%	–	–	91%	4%	-9%	71%	71%	11%
PM Period (4 to 8 PM)									
Freeway	10%	–	–	18%	2%	-2%	17%	17%	16%
Arterial	6%	–	–	13%	4%	-6%	25%	25%	5%
Local	9%	–	–	39%	1%	-7%	106%	106%	9%
Daily Total									
Freeway	7%	–	–	26%	5%	-3%	31%	31%	12%
Arterial	10%	–	–	29%	7%	-7%	30%	30%	6%
Local	19%	–	–	75%	3%	-8%	59%	59%	10%
Total							31%	31%	8%

Brooklyn – Congested Corridors

- I-278/Brooklyn-Queens Expressway, and**
- I-278/Gowanus Expressway from the Belt Parkway to the Queens County Boundary** – The eastbound and westbound directions of these roadways are the 11th and 13th highest-ranked corridors in the United States, respectively, in terms of Delay per Mile in the TTI Report. In the morning, the main issue is eastbound, where Manhattan-bound traffic runs into several choke points in downtown Brooklyn which are caused by heavy merging and weaving as well as substandard design. The queue formed by this spills back for several miles onto the Gowanus Expressway almost to the Verrazano-Narrows Bridge. According to the TTI report, average travel times are roughly 2.5 times free flow, with travel times over 3 times free flow once per week and 4.8 times free flow once a month.

In the evening, the main eastbound choke points are the point where traffic from the Williamsburg Bridge merges in, and merging and weaving that takes place east of that point (as the road approaches the steep incline to the peak of the Kosciuszko Bridge and the nearby exit to the Long Island Expressway). The main westbound choke points in the evening are the point where traffic from the Hugh L. Carey (Brooklyn-Battery) Tunnel merges in, and merging and weaving that takes place between that point and the exit for the Prospect Expressway.

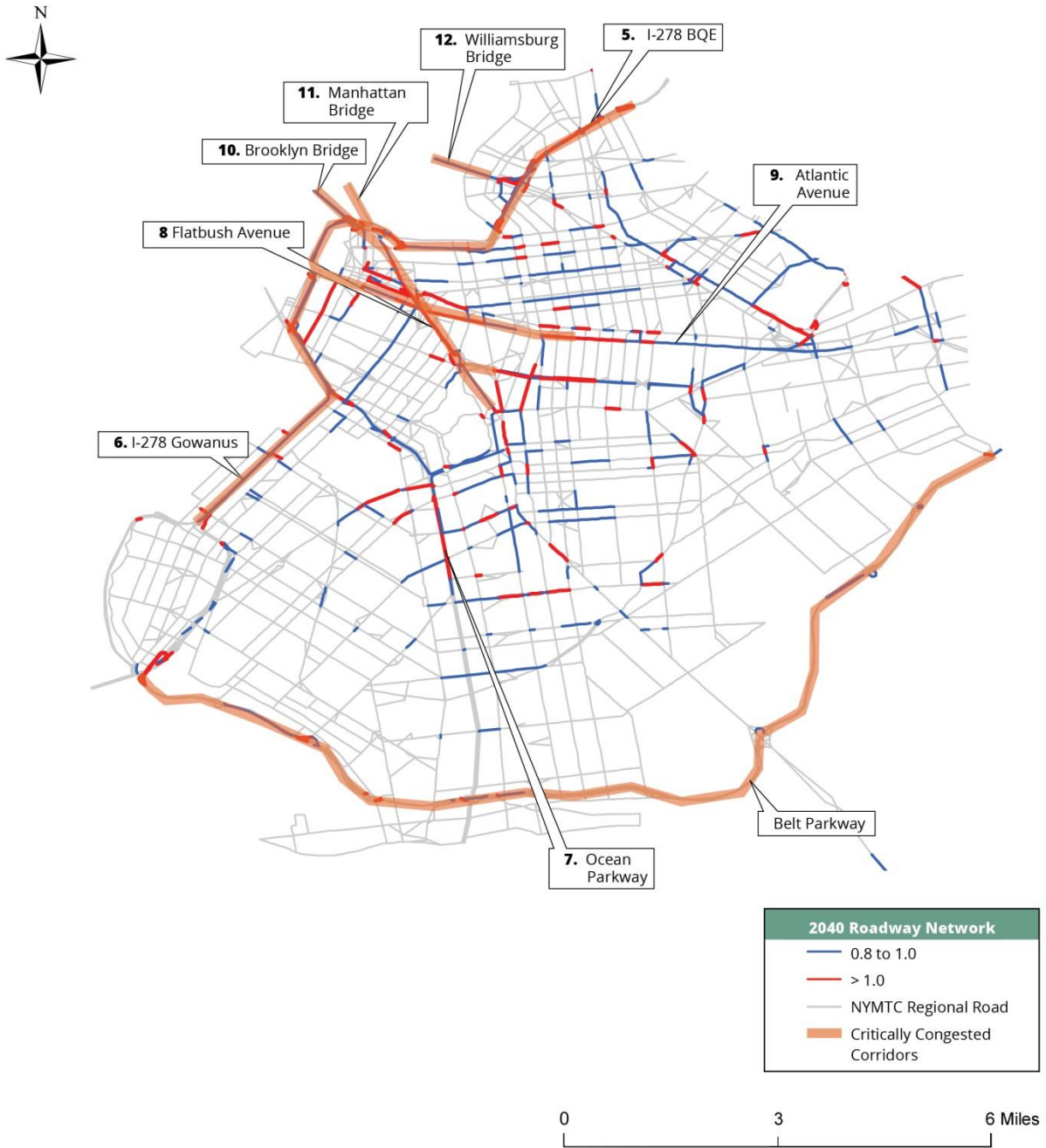
As I-278 is the only limited-access highway traversing Brooklyn that is open to through trucks, it plays a very important role in the regional flow of goods between the ports in New Jersey/Brooklyn and consumers and businesses in Queens and Long Island. Consequently, the economic cost of the congestion on I-278 is very high.

- Ocean Parkway from Avenue J to Church Avenue** – This is a six-lane arterial with many signalized intersections, carrying large volumes of traffic between southern Brooklyn and downtown Brooklyn and the bridges to Manhattan. Congestion occurs northbound in the morning peak and southbound in the evening peak.
- Flatbush Avenue from Eastern Parkway/Grand Army Plaza to I-278/Brooklyn-Queens Expressway** – This is a six-lane arterial with many signalized intersections, carrying large volumes of

traffic between central Brooklyn and downtown Brooklyn and the Manhattan Bridge. There is a major chokepoint in the morning where traffic from eastbound I-287 (and westbound I-287 via Tillary Street) merges into the Manhattan-bound flow. Flow is also restricted by interactions with major generators along the northern half of this roadway section, such as the Barclays Center, the Brooklyn Academy of Music, and the Long Island University campus. Pedestrian crossings are a significant congestion-causing factor. Congestion occurs mostly southbound in the evening peak and northbound in the morning peak.

9. **Atlantic Avenue from I-278/Brooklyn-Queens Expressway to Utica Avenue** – This is a six-lane arterial with many signalized intersections, carrying large volumes of traffic between eastern Brooklyn and downtown Brooklyn and (via connecting roadways) the bridges to Manhattan. Again, pedestrian crossings are a significant factor, as Atlantic Avenue traverses several densely developed residential areas. Congestion occurs westbound in the morning peak and eastbound in the evening peak.
10. **Brooklyn Bridge** – The southernmost bridge across the East River connecting Brooklyn with lower Manhattan, it carries 6 lanes of traffic (3 in each direction). These lanes are heavily utilized because the bridge is toll-free and due to the direct or semi-direct connections that exist between the Bridge and I-278 in Brooklyn and the FDR Drive in Manhattan. Congestion occurs at the points where traffic merges onto and off of the Bridge from/to these highways, as well as at other points where Bridge traffic interacts with the Brooklyn and Manhattan street network. Congestion occurs inbound (toward Manhattan) in the morning peak and outbound (toward Brooklyn) in the evening peak.
11. **Manhattan Bridge** – This bilevel, toll-free bridge has greater peak period carrying capacity than the Brooklyn Bridge, with two lanes in each direction available at all times plus three reversible lanes to carry peak flows inbound in the morning and outbound in the afternoon. The bridge is part of a direct connection between the Holland Tunnel and Brooklyn. The bridge connects directly to Flatbush Avenue and other major surface arterials in Brooklyn, and it links to major east-west streets and north-south avenues in Manhattan. Most connections to I-278 must be made indirectly via surface streets, and there are no direct connections with the FDR Drive in Manhattan. Consequently, congestion occurs at points where Bridge traffic interacts with the street systems in both boroughs, but normally not on the bridge itself. Congestion occurs inbound (toward Manhattan) in the morning peak and outbound (toward Brooklyn) in the evening peak.
12. **Williamsburg Bridge** – This bridge carries 8 traffic lanes (and a subway line) across the East River. In Brooklyn, it has excellent connections with I-278 to/from the east, but is accessible only via Delancey Street in Manhattan, causing long backups on the Bridge approaching Manhattan in the morning, and heavy delays on Manhattan streets leading to the Bridge in the evening.

Brooklyn: Congested Corridors and Hot Spot Areas (AM Period)



Brooklyn: Congested Corridors and Hot Spot Areas (PM Period)

