

# **Manhattan River Crossings 2001**

**PT 2219913 and PT 2220914  
Contract D00642**

**Task CDOT-02-01 and CDOT-02-02**

The preparation of this report was financed in part with funds from the U.S. Department of Transportation, Federal Highway Administration, under the Federal Highway Act of 1956, as amended, and the Urban Mass Transportation Act of 1964, as amended. This document is disseminated by the New York City Department of Transportation in the interest of information exchange. It reflects the views of the New York City Department of Transportation (NYCDOT), which is responsible for the facts and the accuracy of the data presented herein. The report does not necessarily reflect any official views or policies of the Federal Transit Administration, the Federal Highway Administration, or the State of New York. The report does not constitute a standard, specification, or regulation. NYCDOT is grateful to the Port Authority of New York and New Jersey (PANYNJ) and the Metropolitan Transportation Authority (MTA) for providing data used to develop this report.

Following is the introduction and summary of the report. The complete report is available from the Division of Traffic Operations of the Department of Transportation.

Prepared by:  
New York City Department of Transportation

Iris Weinshall  
Commissioner

Judy Bergtraum  
First Deputy Commissioner

David Woloch  
Deputy Commissioner/Senior Policy Advisor

Michael Primeggia  
Deputy Commissioner

Ann Marie Sledge-Doherty  
Director, Research, Implementation, and Safety

Richard P. Roan  
Research, Implementation, and Safety

## **INTRODUCTION**

Since 1948, the City of New York has been monitoring traffic flow over the 20 bridges and tunnels serving Manhattan. The *Manhattan River Crossings* report, published annually by the New York City Department of Transportation (NYCDOT) since 1972, presents vehicular volumes, classification, and trends for all bridge and tunnel facilities serving Manhattan. All toll-free bridges are monitored with automatic traffic recording (ATR) machines during the fall season.

The average hourly volumes by direction for 2001 are presented in histograms for each facility. Trends were developed from a regression analysis of volumes from 1948 to 2001. The annual growth rate was derived from the linear regression equation that reflects the best fitting straight line. The total vehicular flow to and from Manhattan has been summarized similarly with growth curves, hourly histograms, and a graph of vehicle accumulation in Manhattan. The statistical analysis presented in the report was performed by Subregional Transportation Planning Program staff of NYCDOT during the 2001-2002 and 2002-2003 program years.

NYCDOT extends its appreciation to the Port Authority of New York and New Jersey (PANYNJ) and the Metropolitan Transportation Authority (MTA) for their assistance in the data collection process.

## SUMMARY

### Impacts of 9/11

- Traffic volumes on Manhattan bridges and tunnels serving the area south of 63<sup>rd</sup> Street were heavily impacted by the events of 9/11, and by restrictions on traffic entering Manhattan south of 63<sup>rd</sup> Street during the ensuing months. The most significant impacts were on facilities south of Canal Street. In the fall of 2001, Brooklyn Bridge traffic was 35.3% below its year-earlier level. Brooklyn-Battery Tunnel traffic was down 78.2%, and Holland Tunnel traffic was down 57.1%.
- Following 9/11, non-essential single-occupant vehicles were prohibited from entering Manhattan via any bridge or tunnel south of 63<sup>rd</sup> Street between 6:00am and 11:00am on weekdays.
- On weekdays between 5:00am and 6:00pm, only emergency and official vehicles, residential vehicles, commercial traffic, licensed taxis, liveries, and buses were permitted south of Canal Street in Manhattan.
- The following additional restrictions were also placed in effect at Lower Manhattan entry points:
  - The Brooklyn-Battery tunnel was completely closed to non-essential vehicles round-the-clock in both directions.
  - The Manhattan-bound Holland Tunnel was completely closed to all vehicular traffic round-the-clock, except for emergency vehicles. The New Jersey-bound Holland Tunnel was open to passenger cars and buses only (no trucks).
  - On the Brooklyn Bridge, Manhattan-bound traffic was required to access the bridge from the eastbound Brooklyn-Queens Expressway or from Sands Street. The Tillary/Adams Streets entrance was open to emergency vehicles only. Manhattan-bound traffic was directed to the northbound FDR Drive, and was not permitted to exit to either Pearl Street or Centre Street. Brooklyn-bound traffic was required to access the bridge from the southbound FDR Drive only.
- In mid-October, the hours during which non-essential single-occupant vehicles were prohibited from entering Manhattan via any bridge or tunnel south of 63<sup>rd</sup> Street were reduced, to between 6:00am and 10:00am on weekdays. The following additional easing of restrictions also went into effect:
  - The Brooklyn-Battery tunnel was reopened to Brooklyn-bound traffic, but the only access was from a single southbound FDR Drive lane. The Manhattan-bound Brooklyn-Battery tunnel remained closed to non-essential vehicles round-the-clock.
  - The Manhattan-bound Holland Tunnel was reopened to passenger cars only, with a round-the-clock ban on single-occupant vehicles. The

New Jersey-bound Holland Tunnel remained open to passenger cars and buses only (no trucks).

- On the Brooklyn Bridge, the Manhattan-bound entrance from Tillary/Adams Streets was reopened. Manhattan-bound traffic was permitted to exit to northbound Centre Street, as well as to the northbound FDR Drive. Manhattan-bound traffic was still not permitted to exit to Pearl Street. Brooklyn-bound traffic was permitted to access the bridge from Lafayette Street, as well as from the southbound FDR Drive. There was still no Brooklyn-bound access from Centre Street or from Park Row.
- On November 15, the Manhattan-bound Brooklyn-Battery Tunnel was reopened to passenger vehicles only (no trucks or commercial traffic) on week nights between 8:00pm and 6:00am, and from 8:00pm Friday to 6:00am Monday. Between 6:00am and 8:00pm on weekdays, the Manhattan-bound tunnel was open to emergency vehicles and express buses only. The tunnel also remained open to Brooklyn-bound traffic, with the only access from the southbound FDR Drive.
- On November 29, the round-the-clock ban on single-occupant Manhattan-bound cars at the Holland Tunnel was reduced, to between 6:00am and 10:00am on weekdays. The round-the-clock ban on trucks remained in effect. The New Jersey-bound Holland Tunnel remained open to passenger cars and buses only (no trucks).
- Also as of November 29, all passenger cars were allowed south of Canal Street, except between 6:00am and 10:00am on weekdays. Passenger cars still were not allowed in the frozen zone around Ground Zero. Previously, only residential vehicles had been allowed south of Canal Street, along with emergency and official vehicles, commercial vehicles, taxi and limousine commission certified vehicles, buses, and delivery vehicles.

## **2001 Daily Traffic**

- In 2001, daily Manhattan River Crossings declined 12.4%, to 1.713. This was 242,500 fewer than the all-time record 1.956 million average daily crossings recorded during the fall of 2000. The most significant declines were on the facilities south of Canal Street, which was heavily impacted by the events of 9/11. In the fall of 2001, Brooklyn Bridge traffic was 35.3% below its year-earlier level. Brooklyn-Battery Tunnel traffic was down 78.2%, and Holland Tunnel traffic was down 57.1%.
- Some 54,400 vehicles entered Manhattan during the 8-9 am morning peak hour, 25.9% fewer than the 73,400 peak hour entries recorded in 2000. Just over 60,000 vehicles exited during the 4-5 pm evening peak hour, 11.8% fewer than the 68,100 peak hour departures in 2000.
- For the 40th consecutive year, the George Washington Bridge carried more traffic than any other river crossing serving Manhattan. Some 309,300 daily vehicles used this bridge in 2001, 2.6% fewer than the average volume of 317,600 in 2000.

- For the fifth consecutive year, the Queensboro Bridge was the second busiest river crossing, serving 176,500 daily vehicles in 2001, 3.5% fewer than its 2000 daily average of 182,900. The Alexander Hamilton Bridge, which had been in second place continuously from 1978 to 1996, was the third busiest in 2001, as its daily volume declined 5.2%, to 168,600 in 2001 from 177,900 in 2000.
- The average automobile entering Manhattan during the morning peak period carried 1.7 persons including the driver. A total of 50% of peak period automobiles were occupied only by the driver.
- The peak accumulation of motor vehicles in Manhattan on an average weekday occurred at about 2 pm when an estimated 371,400 vehicles were either moving or parked on the island, 6.6% fewer than in 2000. This includes vehicles operating only within Manhattan as well as those entering via the river crossings.

### **Recent Trends**

- In 2001, Manhattan river crossings decreased 12.4% to 1.713 million daily vehicles. Volumes decreased on sixteen of the twenty river crossings.
- The Brooklyn-Battery Tunnel had the most dramatic traffic decrease of all Manhattan river crossing in 2001. Following the events of 9/11, average daily trips through the Brooklyn Battery Tunnel fell by 78.2%, from 63,200 in 2000 to just 13,800 in 2001. Severe restrictions on tunnel usage were in effect during the fall of 2001.
- The largest increase in daily traffic occurred on the Macombs Dam Bridge, where volume rose by 88.6% (+18,600 vehicles), to 39,600 in 2001 from 21,000 in 2000. This increase constitutes a return to normal traffic levels. In 2000, the bridge was undergoing major reconstruction, with one of two lanes closed in each direction, and trucks banned from the bridge.
- Annual subway ridership citywide rose 1.7% to 1.405 billion in 2001, the highest level since 1954.

### **Ten-Year Trends (1991-2001)**

- In the ten-year period from 1991 to 2001, Manhattan traffic volume fell 1.8%, to 1,713,000 from 1,744,100, a decrease of 31,100 daily vehicles. This decrease is entirely attributable to the events of 9/11/2001, as daily traffic had risen 12.1% during the preceding nine years, to an all-time record level of 1,955,500 in 2000 from 1,744,100 in 1991.
- Daily vehicle trips entering Manhattan were 2.1% lower in 2001 than in 1991. The biggest decrease in inbound trips occurred during the 7-10am period, which fell 18.6% due to the restrictions on vehicle entries south of 63<sup>rd</sup> Street following the events of 9/11/2001. The biggest increase in inbound motor travel was recorded during the 1-4am period (+35.2%).
- Trips leaving Manhattan decreased 1.5% since 1991. The biggest outbound decrease occurred during the 7-10am period (-8.9%). The biggest increase in outbound river crossings was recorded during the 1-4am period (+20.0%).

- Vehicle trips on the 13 toll-free East and Harlem River bridges grew at an average annual rate of 1.0% per year from 1991 to 2001. The highest average annual growth rate was on the University Heights Bridge: +5.2% per year. The greatest volume increase occurred on the Queensboro Bridge (45,000 more daily vehicles in 2001 than in 1991). The Macombs Dam Bridge had the highest annual rate of decline: -1.9% per year.
- Traffic volumes on the four MTA Bridges and Tunnels (MTABT) river crossings serving Manhattan decreased at an average annual rate of 0.1% per year since 1991. The biggest average annual rate of decline was at the Brooklyn-Battery Tunnel (-3.7% per year). Henry Hudson Bridge traffic increased at an average annual rate of 1.7%.
- Traffic volumes on the three trans-Hudson Port Authority of New York and New Jersey (PANYNJ) river crossings serving Manhattan increased 1.1% per year since 1991. The highest average annual growth rate was at the George Washington Bridge (+2.3% per year), which also had the biggest volume increase (+46,800 vehicles per day).
- New York City motor vehicle registrations increased 0.4% per year. In Manhattan, registrations increased 1.4% per year.

## Historical Trends

- During the 25 years following 1948, motor vehicle traffic to and from Manhattan increased 2.9% per year. By 1973 it had reached 1.493 million daily trips. Gasoline shortages arising from the first OPEC oil crisis contributed to traffic declining by 1.5% per year between 1973 and 1976. In 1977 and 1978, traffic growth resumed at 2.3% per year. Another OPEC crisis caused traffic to decline 2.4% in 1979. The 1980s brought new growth at 2.9% per year until 1987, when traffic volume declined by less than 1%. This slow downward trend continued through 1994. This was followed by increases of 3.0% in 1995, 0.4% in 1996, 4.4% in 1997, 2.9% in 1998, 1.7% in 1999, and 1.2% in 2000 (to an all time record of 1.956 million). In 2001, daily volume decreased 12.4%, to 1.713 million.
- Between 1948 and 2001, daily vehicle trips to and from Manhattan rose 156%, to 1,713,000 from 670,000 (1,043,000 additional trips). The biggest growth was on the PANYNJ's three trans-Hudson facilities, where traffic climbed by 296%. Traffic rose 68% on the four toll-free East River bridges, 175% on the nine toll-free Harlem River bridges, and 177% on the MTABT's four toll crossings.
- Between 1951 and 1961, daily traffic growth to and from Manhattan averaged 3.0% per year. The largest annual growth rates occurred on the Brooklyn Bridge (+16.2%), and on the Washington Bridge over the Harlem River (+8.1%). The largest annual decline was on the Manhattan Bridge, where daily traffic decreased 4.1% per year.
- Between 1961 and 1971, daily traffic growth to and from Manhattan averaged 2.7% per year. The largest annual growth rates occurred on the George Washington and Triborough Bridges, +7.0% and +4.3%, respectively. The biggest annual decline was on the Washington Bridge over the Harlem River (-6.2%).

- Between 1971 and 1981, traffic growth on all Manhattan crossings averaged 0.4% per year. The largest annual growth rates were on the Broadway Bridge over the Harlem River (+1.4%), and through the Brooklyn-Battery Tunnel (+1.3%). The biggest annual decline was on the Henry Hudson Bridge (-3.9%).
- Between 1981 and 1991, traffic growth on all Manhattan river crossings averaged 1.3% per year, with positive growth rates on sixteen of the twenty facilities. The largest annual growth rates were on the Henry Hudson Bridge (+6.8%), the Washington Bridge over the Harlem River (+3.5%), the Williamsburg Bridge (+3.3%), and the Broadway Bridge over the Harlem River (+3.3%). The biggest annual decline was on the Manhattan Bridge (-2.3%).
- During the 53-year period from 1948 to 2001, average daily Manhattan vehicular river crossings rose 156%, to 1,713,000 from 670,000. During the same period, annual citywide subway ridership declined by 31%, to 1,405,000,000 from 2,031,000,000.

### **Origin-Destination**

- According to the 1990 census data, 45% of all automobile work trips ending in Manhattan originated in the other four boroughs, 43% came from outside the city, and the remaining 12% originated within Manhattan.
- Origin and Destination (O & D) surveys conducted by PANYNJ in 1989 at its trans-Hudson crossings show that 40% of all automobiles entering Manhattan from New Jersey each day have final destinations outside Manhattan. Similar surveys conducted in 1991 show that 78% of the trucks entering from New Jersey have final destinations outside Manhattan. These figures indicate that 99,775 autos and trucks entering Manhattan from New Jersey in 2001 each day were simply passing through.
- PANYNJ's O & D surveys show that 89% (88,725 vehicles) of all daily "through-Manhattan" auto and truck trips from New Jersey use the George Washington Bridge and the Trans-Manhattan Expressway. The remaining 11% (11,050 vehicles) use the Lincoln and Holland Tunnels and proceed across Manhattan along congested City streets.
- PANYNJ reports show that 67% (21,750 automobiles) of morning peak period (7-10 am) automobiles entering from New Jersey have final destinations in Manhattan.

### **2001 Bridge and Tunnel Reconstruction**

- Brooklyn Bridge:

Westbound lane closures were in effect according to the following schedule.

09/12-11/02:	Round the clock	All days	1 w/b lane closed.
12/09-12/16:	12:01am - 7:00am	Sun	1 w/b lane closed.
12/23:	12:01am - 5:00am	Sun	1 w/b lane closed.

Eastbound lane closures were in effect according to the following schedule.

01/01-06/22:	10:00am - 3:00pm	Mon-Fri	1 e/b lane closed.
06/23-09/10:	10:00am - 3:00pm	Mon-Fri	1 e/b lane closed,
	6:00am - 3:00pm	Sat	1 e/b lane closed.

From March 31 to June 15, one of two lanes on the westbound entrance from Tillary/Adams Streets was closed weekdays between 10:00am and 2:00pm.

From September 12 to October 19, westbound access was available only from Sands Street and from the Brooklyn-Queens Expressway. All westbound traffic was required to exit to the northbound FDR Drive in Manhattan.

From October 20 to November 2, westbound access was available from Sands Street, Tillary/Adams Streets, and from the Brooklyn-Queens Expressway. Westbound traffic was required to exit to the northbound FDR Drive or Centre Street in Manhattan.

Throughout 2001, there were additional closings of single lanes in both directions on the Brooklyn Bridge during off-peak hours.

- Manhattan Bridge:

As of June 30, pedestrian and bicycle access was restored on the south side of the Manhattan Bridge, on an interim roadway .

The reversible Lower Roadway of the Manhattan Bridge was operated according to the following schedule.

01/01-01/26:	6:00am - 9:30am	Mon-Fri	Manhattan-bound, All other times	Brooklyn-bound.
01/27-12/31:	6:00am - 1:00pm	Mon-Fri	Manhattan-bound, All other times	Brooklyn-bound.

Throughout 2001, one of three lanes on the reversible Lower Roadway of the Manhattan Bridge was closed at all times.

The reversible Lower Roadway of the Manhattan Bridge was completely closed according to the following schedule.

01/12-01/22:	9:00pm Fri - 5:00am	Mon.
02/17-03/17:	6:00am - 3:00pm	Sat.
03/24-04/28:	7:00am - 5:00pm	Sat.
05/05-06/23:	12:01am - midnight	Sat.

The eastbound South Upper Roadway of the Manhattan Bridge was completely closed according to the following schedule.

05/05-12/31:	9:00pm - 5:00am	Weeknights.
--------------	-----------------	-------------

Weekend capacity on the Manhattan Bridge was also limited by additional lane closures according to the following schedule.

06/30-07/01:	7:00am - 4:00pm	Sat-Sun	2 e/b lanes & 2 w/b lanes open.
07/06-07/08:	9:00pm Fri - 5:00pm Sun		2 e/b lanes & 2 w/b lanes open.
07/14-08/12:	6:00am - 8:00pm	Sat	2 e/b lanes & 2 w/b lanes open.
	6:00am - 5:00pm	Sun	2 e/b lanes & 2 w/b lanes open.
08/18:	12:01am - 2:00pm	Sat	3 e/b lanes & 2 w/b lanes open.
08/25:	7:00am - 3:30pm	Sat	2 e/b lanes & 2 w/b lanes open.
10/06-11/24:	7:00am - 5:00pm	Sat	2 e/b lanes & 2 w/b lanes open.
12/01-12/31:	7:00am - 5:00pm	Sat	2 e/b lanes & 2 w/b lanes open.
	7:00am - 5:00pm	Sun	3 e/b lanes & 2 w/b lanes open.

Throughout 2001, there were additional intermittent closings of single lanes in both directions on individual roadways of the Manhattan Bridge during off-peak hours.

- Queensboro Bridge:

Throughout 2001, trucks were permitted on the two lower inner roadways only.

Throughout 2001, a High Occupancy Vehicle (HOV) facility was in effect on the Queensboro Bridge. The normally Queens-bound South Upper Roadway was reversed between 6:00am and 9:30am on weekdays to accommodate Manhattan-bound HOVs (no trucks) carrying two or more occupants.

Queensboro Bridge roadway operating configurations during 2001

All 2001:	N. Inner: W/B all times; W/B trucks required to use this roadway.
	S. Inner: E/B all times; E/B trucks required to use this roadway.
	N. Upper: W/B all times.
	N. Outer: Bicyclists and pedestrians all times.
	S. Outer: E/B all times (passenger cars only).
01/01-09/11	S. Upper: W/B HOVs 6:00-9:30am weekdays, E/B all other times.
09/12-12/31	S. Upper: W/B HOVs 5:00-9:30am weekdays, E/B all other times.

Throughout 2001, there were intermittent closings of single lanes on individual roadways of the Queensboro Bridge during off-peak hours. Closings were limited to one lane in each direction.

- Williamsburg Bridge:

Throughout 2001, trucks were permitted only on the outer roadways of the Williamsburg Bridge.

Williamsburg Bridge roadway operating configurations during 2001

01/03-01/12:	North Outer Rdwy:	Inbound all hours.			
	South Outer Rdwy:	Outbound all hours.			
	North Inner Rdwy:	6:00am - 3:00pm	Mon-Sat	Both lanes	
	(Inbound)	closed, All other times lane closed.			1
	South Inner Rdwy:	6:00am - 10:00am	Mon-Fri	2 lanes	
	(Reversible)	inbound, 6:00am - 3:00 pm	Sat	2 lanes	
		inbound, All other times lanes outbound.			2
01/13-01/28:	North Outer Rdwy:	10:00am - 3:00pm	Mon-Fri		1
		lane closed.			
	South Outer Rdwy:	Outbound all hours.			
	North Inner Rdwy:	6:00am - 3:00pm	Mon-Fri	Both lanes	
	(Inbound)	closed, All other times lane closed.			1
	South Inner Rdwy:	6:00am - 3:00pm	Mon-Fri	2 lanes	
	(Reversible)	inbound, All other times lanes outbound.			2
01/29-12/09:	North Outer Rdwy:	Closed all hours.			
		<i>Inbound trucks banned from bridge.</i>			
	South Outer Rdwy:	Outbound all hours.			
	North Inner Rdwy:	Closed all hours.			
	South Inner Rdwy:	Inbound all hours.			
12/10-12/30:	North Outer Rdwy:	Inbound all hours.			
	South Outer Rdwy:	Outbound all hours.			
	North Inner Rdwy:	Closed all hours.			
	South Inner Rdwy:	5:30am - 2:30pm	Mon-Fri	2 lanes	
	(Reversible)	inbound, All other times lanes outbound.			2

Throughout 2001, there were intermittent closings of single lanes on individual roadways of the Williamsburg Bridge during off-peak hours.

- Alexander Hamilton Bridge:

Throughout 2001, one of three lanes in each direction on the Cross Bronx Expressway between the Alexander Hamilton Bridge and Castle Hill Avenue was closed intermittently at work areas from 10:00pm to 6:00am

weeknights. Two of three lanes were closed intermittently from 12:01am to 5:00am.

- Macombs Dam Bridge:

From January 1 to March 31, one of two lanes in each direction on the Macombs Dam Bridge and the 155th Street Viaduct was closed at all times. Trucks were banned from the bridge. Access from Adam Clayton Powell, Jr. Boulevard to/from the bridge/viaduct was closed. The southbound Major Deegan Expressway exit ramp to the bridge was closed.

There were intermittent complete closures of the entire bridge in the Manhattan-bound direction according to the following schedule.

02/25-03/31: 11:00pm – 5:00am Sun-Thu,  
11:00pm – 8:00am Fri-Sat,  
11:00pm – 9:00am Sat-Sun.

Throughout 2001, there were intermittent closings of single lanes on the Macombs Dam Bridge during off-peak hours; there were no such closures during New York Yankee home games.

Following the completion of the New York Yankee post season home game schedule, one of two lanes in each direction was closed round the clock through the end of 2001. The Major Deegan Expressway southbound ramp to the bridge, and the ramp from the bridge to the southbound Major Deegan Expressway, were also closed.

- Madison Avenue Bridge:

Throughout 2001, there were intermittent weekday closings of one of the two Manhattan-bound lanes between 9:30am and 3:00pm, and one of the two Bronx-bound lanes between 8:00am and 3:00pm.

- Third Avenue Bridge (Harlem River):

Throughout 2001, there were intermittent weekday closures of one lane on the approach from Bruckner Boulevard and Third Avenue between 10:00am and 3:00pm.

- Willis Avenue Bridge:

From January 1 to September 21, there were intermittent weekday closures of one of the two approach lanes from First Avenue between 9:30am and 2:0pm.

From January 1 to September 21, only one lane was available on the Bruckner Boulevard exit ramp weeknights between 10:00pm and 6:00am.

From October 6 to December 31, there were intermittent weekday closures of one lane on the Willis Avenue Bridge between 10:00am and 3:00pm.

On Wednesday, May 30, The Willis Avenue Bridge was completely closed from 12:01am to 5:30am.

- Brooklyn-Battery Tunnel:

From 6:00am to 10:00am on weekdays, a Manhattan-bound High Occupancy Vehicle (HOV) lane for vehicles carrying two or more persons and equipped with *EZ-Pass* was provided on the outbound roadway of the Gowanus Expressway from the Belt Parkway to the Brooklyn-Battery Tunnel, with access to the Brooklyn-Battery Tunnel only. During these times, two outbound lanes were available on the Gowanus Expressway. In order to accommodate the HOV facility, the outbound Gowanus Expressway entrance ramp from Third Avenue/Prospect Avenue was closed between 5:00am and 11:00am. The ramp from the outbound Gowanus Expressway to the outbound Prospect Expressway was closed from 5:00am to 6:00am and from 10:00am to 11:00am, and was reversed from 6:00am to 10:00am in order to accommodate the Prospect Expressway HOV lane as described below.

From 6:00am to 10:00am on weekdays, a Manhattan-bound HOV lane for vehicles carrying two or more persons and equipped with *EZ-Pass* was also provided from the Prospect Expressway by reversing the ramp from the outbound Gowanus Expressway to the outbound Prospect Expressway. This Prospect Expressway HOV lane runs parallel to the Gowanus Expressway HOV lane from the Prospect/Gowanus interchange to the Brooklyn-Battery Tunnel.

Lane closures were in effect in the Brooklyn-Battery tunnel according to the following schedule.

01/01-02/02:	11:00pm - 5:45am	Mon-Fri	1 lane closed in each direction.
02/03-02/16:	11:00pm - 5:00am	Mon-Fri	1 lane closed in each direction,
	12:01am - 6:00am	Sat	1 inbound lane closed.
02/17-03/16:	11:00pm - 5:00am	Mon-Fri	1 lane closed in each direction.
03/17-05/25:	11:00pm - 5:00am	Sun-Fri	1 lane closed in each direction.
05/26-06/01:	11:00pm - 5:00am	Tue-Fri	1 lane closed in each direction.
06/02-08/03:	11:00pm - 5:00am	Mon-Fri	1 lane closed in each direction.
08/04-08/10:	11:00pm - 5:00am	Mon-Fri	1 lane closed in each direction,
	12:01am - 7:00am	Sat	1 lane closed in each direction,
	12:01am - 6:00am	Sun	1 lane closed in each direction.
08/11-09/11:	11:00pm - 5:00am	Mon-Fri	1 lane closed in each direction,
	12:01am - 7:00am	Sat	1 lane closed in each direction.

As of September 11, the Brooklyn-Battery Tunnel was closed in both directions round the clock, except for emergency vehicles and buses.

In mid-October, the tunnel was reopened to outbound traffic via one lane from the FDR Drive only. Inbound traffic remained limited to emergency vehicles and buses.

As of November 15, the tunnel was opened to inbound passenger vehicles (no trucks or commercial traffic) overnight from 8:00pm to 6:00am on weekdays, and on weekends from 8:00pm Friday to 6:00am Monday. Between 6:00am and 8:00pm on weekdays, , inbound traffic remained limited to emergency vehicles and buses.

- Henry Hudson Bridge:

One of three northbound (upper level) lanes was closed according to the following schedule.

01/01-03/16:	Round the clock from Dyckman closed.	All days	1 n/b approach lane Street to toll plaza closed.
04/28-06/15:	Round the clock	All days	1 n/b lane closed.
06/16-12/31:	6:00am - 2:00pm	Mon-Fri	1 n/b lane closed.

Southbound (upper level) lane closures were in effect according to the following schedule.

02/03-03/09:	10:00am - noon 9:00pm Mon – 4:00am Tue 10:00am - 3:00pm closed.	Mon Tue-Fri	1 s/b toll lane closed, 1 s/b toll lane closed, 1 s/b toll lane closed.
03/10-03/16:	10:00am - 3:00pm	Mon-Fri	1 s/b toll lane closed.
03/17-06/15:	10:00am - 3:00pm	Mon-Fri	2 s/b toll lanes closed.
06/16-08/03:	10:00am - 3:00pm	Mon-Fri	1 s/b lane closed.
08/04-12/31:	10:00am - 2:00pm	Mon-Fri	1 s/b toll lane closed.

Lane closures were in effect between Dyckman Street and the toll Plaza according to the following schedule:

03/17-04/27:	Round the clock direction.	All days	1 lane closed each direction.
--------------	----------------------------	----------	-------------------------------

Throughout 2001, there were additional intermittent closings of single lanes in both directions on the Henry Hudson Bridge during off-peak hours.

- Queens-Midtown Tunnel:

One entire tube was closed according the following schedule.

01/01-02/02:	11:30pm - 6:00am	Mon-Fri.
02/03-04/27:	10:00pm - 6:00am	Mon-Fri.

04/28-05/25: 10:00pm - 6:00am Sun-Fri.

05/26-07/20: 10:00pm - 6:00am Mon-Fri.

06/16-08/24: 11:30pm Sun - 5:30am Mon.

*During these tube closures, one lane in each direction was maintained in the other tube, with tractor trailers and motorcycles banned from the tunnel.*

One lane in each tube was closed according the following schedule.

01/01-03/16: 11:30pm Sun - 5:30am Mon.

06/16-08/24: 11:30pm Sun - 5:30am Mon.

08/25-12/31: 11:30pm Sun - 5:30am Mon,  
10:00pm - 5:30am Mon-Fri.

Throughout 2001, there were additional intermittent closings of single lanes in both tubes of the Queens-Midtown Tunnel during off-peak hours.

- Triborough Bridge:

Lane closures were in effect on the Triborough Bridge according to the following schedule.

01/01-02/02: 9:30am - 3:00pm Mon-Thu 1 lane closed  
on each roadway,  
10:00am - noon Fri 1 lane closed on each  
roadway.

02/03-03/16: 9:30am - 3:00pm Mon-Thu 1 lane closed  
on each roadway,  
9:30am - 2:30pm Fri 1 lane closed on each  
roadway.

03/17-04/27: 10:00am - 3:00pm Mon-Thu 1 lane closed  
on each roadway,  
10:00am - 2:30pm Fri 1 lane closed on each  
roadway.

04/28-06/15: 9:30am - 3:00pm Mon-Thu 1 lane closed  
on each roadway,  
9:30am - 2:30pm Fri 1 lane closed on each  
roadway.

06/16-12/31: 10:00am - 3:00pm Mon-Thu 1 lane closed  
on each roadway,  
10:00am - 2:30pm Fri 1 lane closed on each  
roadway.

From June 23 to August 24, inbound traffic from the Bruckner Expressway to Manhattan was detoured to Bruckner Boulevard via the 138<sup>th</sup> Street exit (Exit 45) to Saint Anne's Place for re-entry to the Triborough Bridge. The Cypress Avenue/135<sup>th</sup> Street entrance to the bridge from local Bronx streets to Queens was open during that period.

From January 1 to November 9, the ramp from the Triborough Bridge to the northbound Major Deegan Expressway was reduced to one lane.

Lane closures were in effect at work areas on the Major Deegan Expressway between the Triborough Bridge and the Bronx/Westchester border according to the following schedule.

01/01-03/23: 10:00am - 3:00pm Mon-Fri 1 lane each way closed as needed,  
10:00pm - 5:00am Mon-Fri 1 lane each way closed as needed,  
12:30am - 5:00am Mon-Fri 2 lanes each way closed as needed.

Throughout 2001, capacity was limited to two lanes in each direction at all times on the Triborough Bridge connector ramp to/from the Brooklyn-Queens Expressway between 31st Avenue and Astoria Boulevard.

Throughout 2001, there were additional closures of single lanes on the Triborough Bridge roadways during off-peak hours.

- George Washington Bridge:

Following September 11, all trucks were required to use the upper level.

Throughout 2001, there were intermittent closures of single lanes on the various George Washington Bridge roadways and ramps during off-peak hours.

- Holland Tunnel:

Throughout 2001, there were intermittent closures of one of two lanes in both directions in the Holland Tunnel during off-peak hours and on weekends.

Following September 11, the tunnel was completely closed to Manhattan-bound traffic, except for emergency vehicles. The tunnel was open to New Jersey-bound traffic, but trucks were banned.

In mid-October, the tunnel was opened to Manhattan-bound traffic, but single-occupant passenger cars were banned at all times. Trucks were banned in both directions at all times.

As of mid-November, single-occupant Manhattan-bound passenger cars were banned only on weekdays between 6:00am and 6:00pm. The round-the-clock ban on trucks in both directions remained in effect.

As of November 29, single-occupant Manhattan-bound passenger cars were banned only on weekdays between 6:00am and 10:00am. The round-the-clock ban on trucks in both directions remained in effect.

- Lincoln Tunnel:

One of the three tubes of the Lincoln Tunnel was closed according to the following schedule.

01/01-03/09: 11:00pm - 5:00am Mon-Wed,  
1:00am - 9:00am Sun.

03/10-12/31: 11:00pm - 5:00am Mon-Fri,  
12:30am - 8:00am Sat-Sun.

*During these closures, two tubes remained open, providing two lanes of traffic in each direction.*

Following September 11, single-occupant Manhattan-bound passenger cars were banned on weekdays between 6:00am and 11:00am.

As of mid-October, single-occupant Manhattan-bound passenger cars were banned on weekdays between 6:00am and 10:00am.