



## NYC Commuter Cycling Indicator

### *An Estimate of Trends in Regular Cycling for Transportation*

Generally estimating trends in regular bicycle use in NYC is difficult as there are few robust sources of data. For example, the census only asks about cycling use for the trip to work and is conducted only once per decade. NYCDOT has developed a new indicator that makes use of the most robust data available to estimate levels of commuter<sup>1</sup> cycling over time.

Since 1985, NYCDOT has been conducting an annual 12 hour count of cyclists entering and existing the center of Manhattan. Known as the NYC Bicycle Screenline Count, it includes counts of cyclists crossing the four East River bridges, entering and exiting the Staten Island Ferry at the Whitehall Terminal and each avenue and the Hudson River Greenway at 50<sup>th</sup> Street. It is the most robust, long term count in NYC and is the basis of the new NYC Commuter Cycling Indicator. The count is adapted to become an indicator through four primary steps:

#### 1. Removing Irregular, Primarily Non-Commuter Data

An analysis of the avenue data from the screenline count at 50<sup>th</sup> Street showed that cyclist volumes fluctuated significantly from year to year and that the daily peaks were in the middle of the day. This and the fact that 50<sup>th</sup> Street is in the heart of the midtown central business district indicates that much of the cyclist volume crossing 50<sup>th</sup> Street is made up of working cyclists (messengers and food delivery), the volume of which is dependent on certain kinds of economic activity and are not commutation trips. Therefore, the NYC Commuter Cycling Indicator excludes the avenue counts and uses solely the counts of the four East River Bridges, Hudson River Greenway and cyclists entering and exiting the Staten Island Ferry at Whitehall Terminal. The bicycle counts on the bridges, ferry and on the Hudson River Greenway show less variability and because they are limited access facilities; they indicate that a cyclist is taking a long trip rather than the typically short trip of a working cyclists.

#### 2. Creating a Historical Proxy for the Hudson River Greenway

Since the first count was taken in 1980, the Hudson River Greenway and the Manhattan Bridge bicycle path were added to the inventory of cycling facilities. The Manhattan Bridge serves a similar market of cycling as the nearby Brooklyn Bridge. For many cyclists, the Hudson River Greenway provides an alternative to nearby avenues. Therefore, to keep the indicator as a conservative estimate of commuter cyclist volumes over time, counts for Ninth, Tenth, Eleventh and Twelfth Avenues are included in the indicator up to the year 2000. In 2001, when an interim version of the Hudson River Greenway opened, these avenues are dropped from the indicator.

The results of step one and two are the raw data that compose the indicator and are attached in chart and table form.

<sup>1</sup> While many consider commuting as referring to the journey to and from work, our usage here is in concert with the Webster's definition of commute: "to travel regularly, between points at some distance"



**3. Adjust for Annual Volatility of Counts**

One drawback of the screenline count has been that it is conducted on a single day during the summer and thus may not be a robust indicator of a given year’s cyclist volume. Beginning in 2007, the count is conducted three times per year (spring, summer, fall) however, volatility of a sample this small is still an issue. To account for this the indicator is based on a three-year rolling average calculation. For example, the indicator value for 2002 is based on the average of the counts from 2000, 2001 and 2002. The index for the year 2007 is based on the average of the three counts taken that year then averaged with the count from 2005 and 2006.

**4. Index Count to Base 100 for Year 2000**

Since the count is not a count of all cyclists in New York City, it is important that it be clear that the indicator is the best estimate of trends in cycling levels in the City over time. Thus, rather than presenting the rolling average of 8,355 cyclists for 2007, an index is created using the year 2000 as a baseline. All rolling average counts for each year have been divided by the rolling average count for the year 2000 and multiplied by 100. Indexing the year 2000 to 100 allows for simple comparisons between values in this decade.

**Index Results**

Despite the conservative removal of the westerly avenues from the indicator in 2001, the indicator shows a clear and accelerated growth in regular cycling in New York City this decade. It is estimated that commuter cycling has grown by 77% between 2000 and 2007. The table below and attached chart illustrate the acceleration in regular cycling.

With NYCDOT’s accelerated investment in bicycle facilities including bike lanes and paths leading to the four East River bridges, it is anticipated that the commuter cycling volumes will continue to increase.

**NYC Commuter Cycling Indicator for Selected Years**

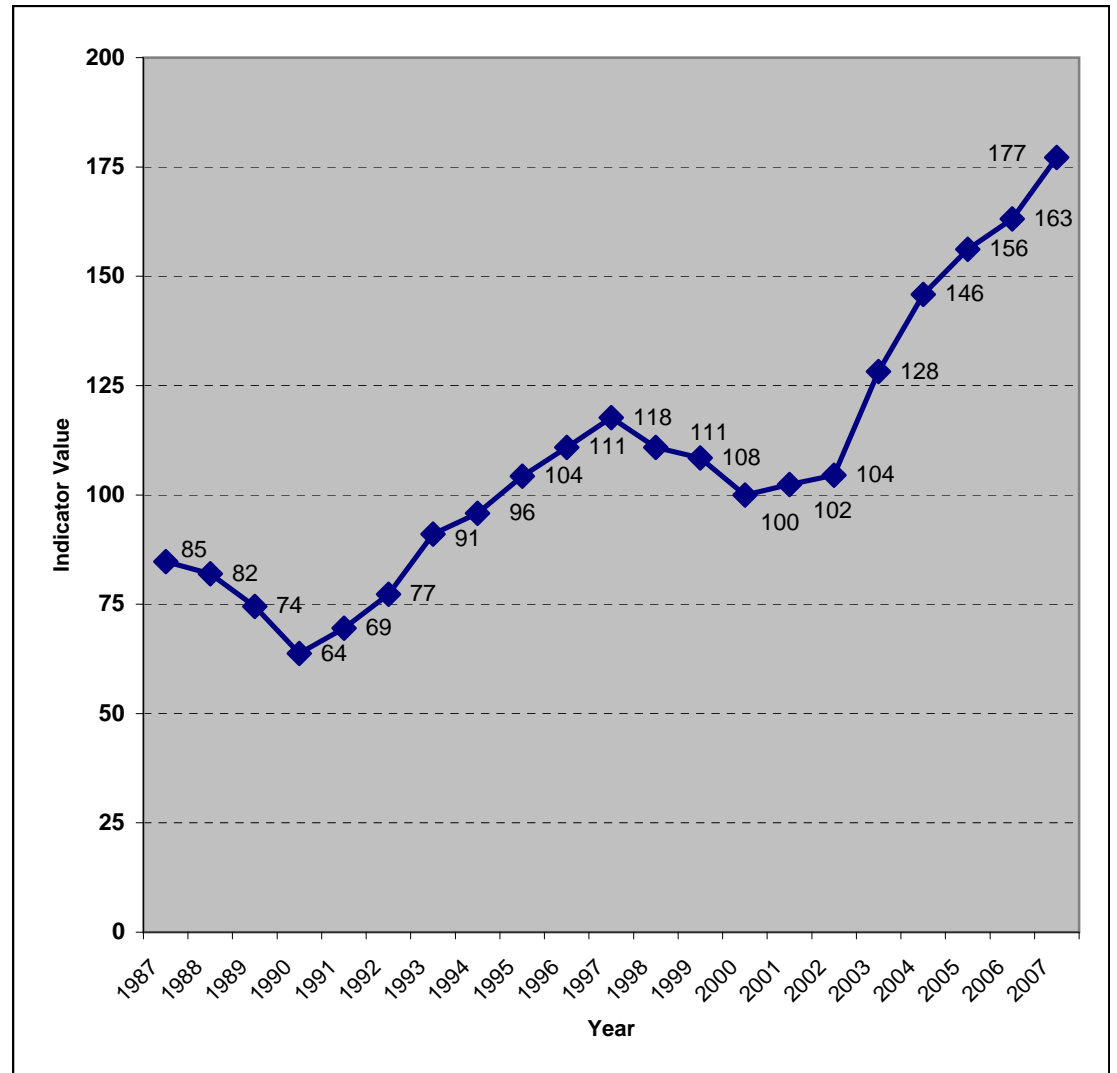
Year	Indicator
1987	85
1990	64
1995	104
2000	100
2005	156
2006	163
2007	177

# NYC Commuter Cycling Indicator

Based on 3 Year Rolling Average of Counts at Selected Commuter Locations

Indexed to Year 2000 = 100

Year	Cyclist Count at Commuter Locations	3 Year Rolling Average	Index of 3 Yr R.A. to 100 for Yr 2000
1980	2,081	N/A	N/A
1981-1984	N/A	N/A	N/A
1985	3,440	N/A	N/A
1986	4,222	N/A	N/A
1987	4,329	3,997	84.8
1988	3,050	3,867	82.0
1989	3,161	3,513	74.5
1990	2,804	3,005	63.7
1991	3,867	3,277	69.5
1992	4,264	3,645	77.3
1993	4,752	4,294	91.1
1994	4,538	4,518	95.8
1995	5,465	4,918	104.3
1996	5,684	5,229	110.9
1997	5,503	5,551	117.7
1998	4,500	5,229	110.9
1999	5,338	5,114	108.4
2000	4,310	4,716	100.0
2001	4,839	4,829	102.4
2002	5,631	4,927	104.5
2003	7,667	6,046	128.2
2004	7,340	6,879	145.9
2005	7,090	7,366	156.2
2006	8,649	7,693	163.1
2007	9,327	8,355	177.2



Bicycle Program

## New York City Bicycle Counts on a Single Weekday (7AM - 7PM) At Selected Commuter Locations (1980-2007)

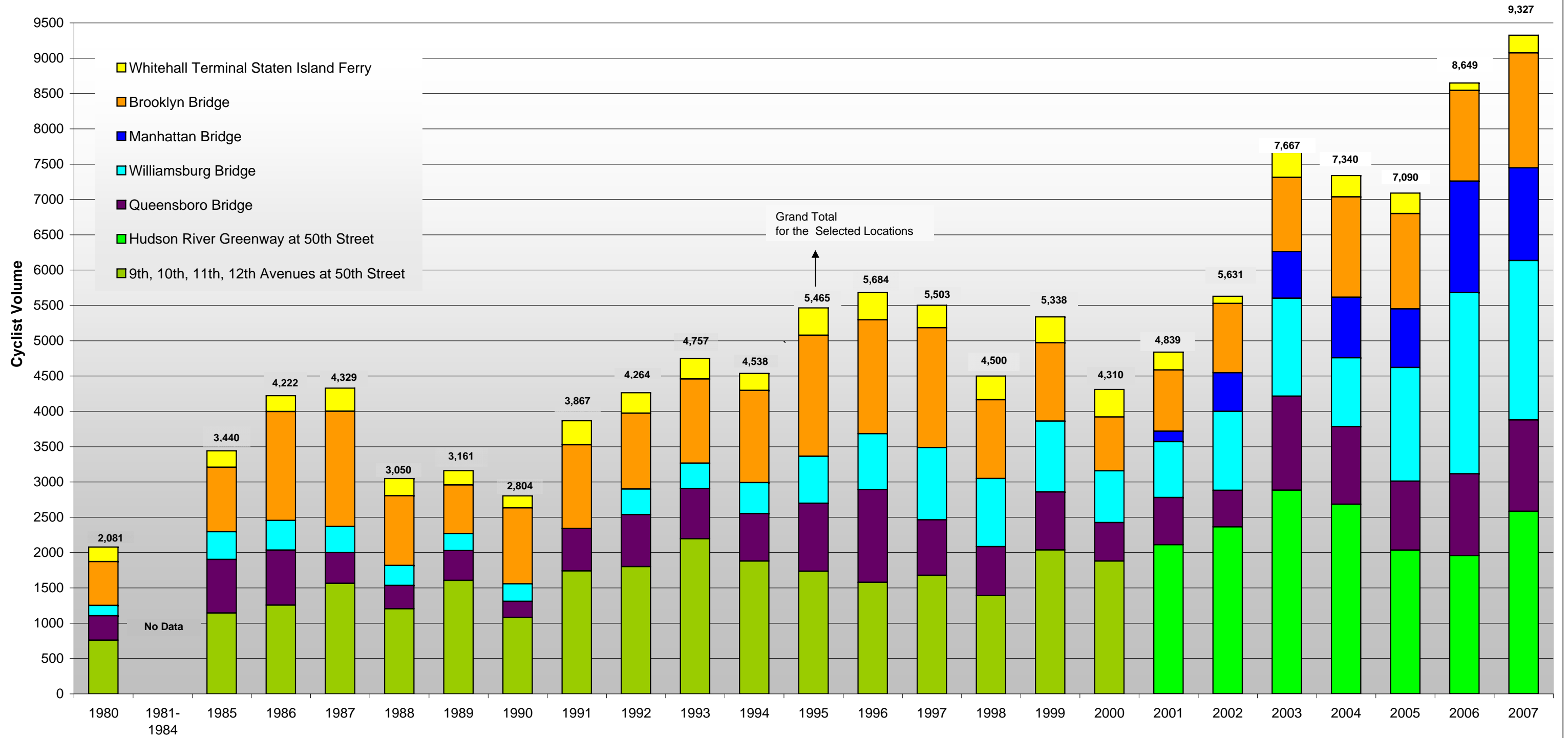
Year	Facility							Grand Total	
	Whitehall Terminal Staten Island Ferry	Brooklyn Bridge	Manhattan Bridge	Williamsburg Bridge	Queensboro Bridge	Hudson River Greenway at 50th St.	9th, 10th, 11th, 12th Avenues at 50th St.		
1980	207	623	N/A. See Note	146	344	N/A. See Note	761	2,081	
1981-1984	N/A	N/A		N/A	N/A		N/A	N/A	N/A
1985	231	913		392	759		1,145	3,440	
1986	224	1,542		420	780		1,256	4,222	
1987	327	1,633		368	436		1,565	4,329	
1988	244	988		282	330		1,206	3,050	
1989	202	690		240	423		1,606	3,161	
1990	170	1,075		248	227		1,084	2,804	
1991	341	1,183		N/A	602		1,741	3,867	
1992	290	1,073		362	737		1,802	4,264	
1993	293	1,193		361	709		2,196	4,752	
1994	241	1,305		439	672		1,881	4,538	
1995	386	1,715		664	964		1,736	5,465	
1996	387	1,613		791	1,314		1,579	5,684	
1997	318	1,698		1,022	786		1,679	5,503	
1998	335	1,115		966	692		1,392	4,500	
1999	366	1,109		1,004	820		2,039	5,338	
2000	389	762		733	546		1,880	4,310	
2001	253	867		147	792		667	2,113	4,839
2002	104	981		546	1,117		517	2,366	5,631
2003	354	1,049	661	1,387	1,331	2,885	7,667		
2004	303	1,422	856	974	1,099	2,686	7,340		
2005	290	1,349	829	1,609	976	2,037	7,090		
2006	105	1,284	1,578	2,566	1,158	1,958	8,649		
2007	252	1,626	1,313	2,257	1,292	2,586	9,327		

**Notes:**

1. Count is on a single mid-summer weekday from 7AM to 7PM except in 2006 and 2007.
2. The cyclist volume in 2006 is from a single weekday count in mid-September.
3. The cyclist volume in 2007 is an average of a single weekday count taken in May, July and September.
4. There is no data available for 12th Avenue in 1986 and the Williamsburg Bridge in 1991.
5. There is no data available from 1981-1984.
6. The Hudson River Greenway and Manhattan Bridge path opened to cycling in 2001.
7. For years prior to availability of the Hudson River Greenway, data for 9th, 10th, 11th and 12th avenues are shown as a proxy for this cycling market catchment.
8. The total count excludes 9th through 12th Avenues from 2001 to 2007 in order to maintain a conservative trend line.



## New York City Bicycle Counts on a Single Weekday (7AM--7PM) at Selected Commuter Locations (1980-2007)



**Notes:**

1. Count is on a single mid-summer weekday from 7AM to 7PM except in 2006 and 2007.
2. The cyclist volume in 2006 is from a single weekday count in mid-September.
3. The cyclist volume in 2007 is an average of a single weekday count taken in May, July and September.
4. There is no data available for 12th Avenue in 1986 and the Williamsburg Bridge in 1991.
5. There is no data available from 1981-1984.
6. The Hudson River Greenway and Manhattan Bridge path opened to cycling in 2001.
7. For years prior to availability of the Hudson River Greenway, data for 9th, 10th, 11th and 12th avenues are shown as a proxy for this cycling market catchment.
8. The total count excludes 9th through 12th Avenues from 2001 to 2007 in order to maintain a conservative trend line.