THE COUNCIL
OF
THE CITY OF NEW YORK

INTERIM REPORT
An Inquiry into the Health Risks of Congestion Pricing on the Outer-Boroughs

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I. Introduction

On April 22, 2007, New York City Mayor Michael Bloomberg announced PLaNYC 2030. The Mayor's plan included a wide array of reforms chosen to deal with the future needs of New York City in the areas of economics, the environment, energy, and transportation. Among the sweeping proposal's many ideas, was a call for the State Legislature to enact legislation to implement congestion pricing for the borough of Manhattan.

Without engaging in further discussion of the economic, societal or administrative aspects of implementing a congestion pricing scheme, the following report concentrates on the possible environmental impact the plan will have on various neighborhoods located in boroughs outside of Manhattan. At the top of most congestion pricing advocate's list of reasons supporting the plan is the premise that congestion pricing is beneficial to the environment. Less cars equals less pollution is a common mantra of congestion pricing supporters. However, one essential fact which is not being recognized is the fact that congestion pricing will not necessarily reduce the total number of cars being driven; it will simply shift the traffic to areas where people can access mass transit.

The current plan does nothing to address the prevalence of background pollutants in outer-borough neighborhoods with the highest incidence of child asthma. Through an analysis of both child asthma rates in

outer-borough neighborhoods, as well as an examination of ridership figures for subway stations throughout the city, it can be inferred that because areas with the highest incidence of asthma are generally the same areas with the greatest number of mass transit riders, it therefore follows that affected neighborhoods will be subjected to an even greater health risk should congestion pricing be implemented. This is further supported by the fact that the affected areas constitute major transit hubs which will draw in more vehicular traffic from motorists wishing to escape the onerous tax imposed on drivers.

The following report draws five conclusions through its investigation into the correlation between public transportation usage and child asthma hospitalization rates. The data compiled is based on statistics provided by the New York City Department of Health and Mental Hygiene and the New York City Transit Division of the Metropolitan Transportation Authority. From the link between asthma rates and transit ridership which is illustrated throughout this report, it can be inferred that if congestion pricing forces more commuters to drive into these neighborhoods which feature greater access to mass transit, the pollution which contributes to high rates of child asthma will only increase.

II. Health Risks of Congestion Pricing on the Outer-Boroughs

1) **In Brooklyn, the area with the highest incidence of asthma is the second highest area in ridership (Crown Heights).**

2) **The area with the greatest number of asthma cases and the second highest percentage of asthma incidence is also the third highest ridership location in Queens (Jamaica).**

3) **In the Bronx, the area with the highest incidence of asthma is also the area with the highest ridership totals (Crotona-Tremont).**

4) **In Queens, Brooklyn, and the Bronx, the top three ridership areas also rank in the top five areas with the highest asthma rates.**

5) **Areas with the highest ridership and the highest incidence of asthma are also some of the most economically disadvantaged neighborhoods throughout the city.**

A. Brooklyn

In Brooklyn, the Area with the Highest Incidence of Asthma is the Second Highest Area in Ridership (Crown Heights)

The Bedford Stuyvesant- Crown Heights neighborhoods located in the borough of Brooklyn have the highest incidence of child asthma throughout the borough. These neighborhoods also hold the unfortunate distinction of boasting the second highest percentage of asthma incidence in Kings County. While the number of asthma cases among children from the age of 0-14 has shown a marked decline over the past decade, the Crown Heights area is still home to one of the highest rates of child asthma citywide.

Many inhabitants of the Bedford Stuyvesant- Crown Heights region of Brooklyn rely on mass transit to commute to and from work on a daily basis. According to statistics compiled by the MTA, this area has the second highest ridership totals in the borough. By comparing the citywide ranking of subway station usage for the Crown Heights area with that of its other Brooklyn counterparts, it can be determined that this area is home to the second highest number of subway riders for the year 2006.

This data provides empirical evidence that a direct correlation does exist in Brooklyn between asthma rates among children and mass transit usage. It is no coincidence that one of the areas with the most asthma cases is also one of the areas with the greatest number of subway riders.

B. Queens

The Area with the Greatest Number of Asthma Cases and the Second Highest Percentage of Asthma Incidence is also the Third Highest Ridership Location in Queens (Jamaica)

In Queens, the subway station with the third highest total of annual ridership is located in Jamaica. In 2006, the Jamaica Center train station recorded just over eleven million station entries. While many parts of Queens County offer very limited access to mass transit, particularly in the neighborhoods of Eastern Queens, Jamaica is an area where public transportation is readily available. Because of the lack of access to mass transit, a routine occurrence for a commuter from Queens is to drive his or her car to an area such as Jamaica in order to travel into Manhattan. Aside from Jamaica, the only other two localities which offer major transit hubs to daily commuters are located in Flushing and Long Island City.

The neighborhoods within Jamaica, Queens also hold the distinction of having the greatest number of asthma cases and the second highest percentage of asthma incidence among children ages 0-14 years old. While Rockaway, Queens has a slightly higher percentage of asthma incidence, Jamaica has by far the largest number of child asthma cases. Again, while the overall asthma rate has declined in this area, it is still one of the worst in the city and in the borough of Queens.

Many commuters from Queens use the Jamaica Station on a daily basis as their sole access point to Manhattan. With very few mass transit options available to a majority of neighborhoods in Queens, the role of Jamaica in relation to public transportation becomes absolutely essential. Since Queens is one of the boroughs with the greatest number of people who travel into Manhattan on a daily basis, if congestion pricing were to be enacted, Jamaica would see an overwhelming increase in traffic from commuters seeking a way into Manhattan. Residents of Eastern Queens, like those from many regions in boroughs outside of Manhattan, will have to rely on Jamaica, Flushing or Long Island City to gain entrance into Manhattan. Since there is virtually no subway service and few lines of Express Bus routes available in many areas of Queens, commuters with limited mass transit access will be forced to drive their cars to the locations where public transportation is readily available. From this analysis, it can be inferred that the asthma rates in Jamaica will see a substantial increase if more motorists are forced into this area as a means of gaining access to Manhattan.

C. The Bronx

In the Bronx, the Area with the Highest Incidence of Asthma is Also the Area with the Highest Ridership Totals (Crotona-Tremont)

The neighborhoods of Crotona-Tremont report the highest percentage of asthma cases in the Bronx. At eleven people per thousand residents, these neighborhoods suffer from a serious health crisis related to child asthma. The Bronx has the unfortunate distinction of being the borough with the highest incidence of asthma among children, and the Crotona-Tremont region ranks as the top victim in the borough.

The area in the Bronx with the highest ridership entry totals is also the Crotona-Tremont region. With many residents of the borough traversing into Manhattan on a daily basis to earn a living, ridership numbers have seen a steady increase over recent years. The Crotona-Tremont area provides Bronx residents with access to Manhattan through a wide array of subway lines. However, this vehicular intrusion into the community has come at a steep price to the health of its children as evidenced by the fact that the area with the highest asthma incidence is also that with the greatest ridership totals.

Finding ways to control a condition as debilitating as asthma is already a daunting task, but if congestion pricing brings even more cars into the affected areas, there will be very little that can be done to control the pollutants that these areas will be exposed to.

D. The Outer-Borough Dilemma

In Queens, Brooklyn, and the Bronx, the Top Three Ridership Areas Also Rank in the Top Five Areas with the Highest Asthma Rates

The areas of Jamaica, Bedford Stuyvesant-Crown Heights, and Crotona-Tremont, in the boroughs of Queens, Brooklyn, and the Bronx respectively, are home to the most-used subway stations outside of Manhattan. Millions of commuters travel through their turnstiles on a daily basis, with the numbers steadily increasing over recent years. However, these aforementioned areas also rank in the top five areas with the highest asthma rates in boroughs outside of Manhattan.

Whether judged on the basis of percentage of children with asthma per one thousand residents, or solely on the number of cases of asthma related hospitalizations, these previously mentioned neighborhoods sit atop a list that no neighborhood is eager to headline. While great strides have been made as part of a tremendous undertaking to steadily reduce the incidence of child asthma across the city, more traffic going to those affected areas will only hinder progress; and congestion pricing can easily cause more traffic to flow to those areas located outside of Manhattan's Central Business District. Commuters must be able to gain access to mass transit on a daily basis; therefore they will be forced to drive to or through these areas in order to get into Manhattan which will only exacerbate the asthma problem.

E. The Economically Disadvantaged

Areas with the Highest Ridership and the Highest Incidence of Asthma are also Some of the Most Economically Disadvantaged Neighborhoods Throughout the City

Jamaica, Crotona and Crown Heights share more than high asthma rates and subway ridership totals in common. These three areas, which can be used as benchmarks throughout this study, are also areas that are home to some of the most economically disadvantaged neighborhoods throughout New York City. The less affluent neighborhoods throughout the five boroughs are also the areas where you can find the greatest number of asthma related hospitalizations, particularly in young children. These areas also carry another distinction in common; they are areas with the greatest access to mass transit and the most number of people who use public transportation on a daily basis.

Congestion pricing will undoubtedly force more commuters into these areas as they seek entrance into Manhattan. Subsequently, congestion pricing leads to not only greater congestion for these already densely populated neighborhoods, but it will undoubtedly put them at a substantially greater risk of pollutant-related health risks, such as asthma.

III. Summary of Findings

Throughout this study, the point has been made clear, that a direct correlation exists between asthma rates and transit ridership. It is not a coincidence that regions which are considered hubs for mass transit contain a significant percentage of the population affected by health disorders that stem from pollution such as asthma. However, congestion pricing is not a cure, because it will only lead more people to travel into these areas, thus increasing the exposure to background pollutants by the local population, and aggravating an already dangerous health risk.

If public transportation is not easily available to commuters who will no longer be able to drive into Manhattan due to congestion pricing, these individuals will have to find other alternatives, such as driving to neighborhoods where mass transit is abundantly offered. If congestion pricing advocates argue that more cars equal more pollution, than how can it be argued that more cars going to these neighborhoods will not also lead to more pollution for them, and greater health problems. Shifting the environmental problems inherent to traffic congestion to neighborhoods outside of Manhattan is not the answer to our congestion problem; it is merely creating a problem in order to solve another one.

Appendix A

Annual Subway Ridership & Rank by Station

Borough	Station	Rank	2006 Ridership
BK	**Court St (M,R) / Borough Hall (2,3,4,5)**	**27**	**9,746,520**
BK	**Atlantic Av (B,Q,2,3,4,5) / Pacific St (D,M,N,R)**	**29**	**9,134,590**
BK	**Jay St-Borough Hall (A,C,F)**	**32**	**8,738,979**
BK	Crown Heights-Utica Av (3,4)	36	7,973,874
BK	Brooklyn College-Flatbush Av (2,5)	60	5,761,658
BK	Kings Hwy (B,Q)	71	5,222,753
BK	Bedford Av (L)	78	4,999,176
BK	Nostrand Av (A,C)	83	4,748,062
BK	Church Av (B,Q)	85	4,648,529
BK	DeKalb Av (B,M,Q,R)	86	4,636,026
BK	Myrtle-Wyckoff Avs (L,M)	93	4,376,360
BK	Utica Av (A,C)	98	4,204,548
BK	Sheepshead Bay (B,Q)	103	4,102,969
BK	Coney Island-Stillwell Av (D,F,N,Q)	106	3,981,855
BK	Franklin Av (2,3,4,5)/Botanic Garden (S)	109	3,791,133
BK	Brighton Beach (B,Q)	113	3,682,370
BK	Metropolitan Av (G)/Lorimer St (L)	115	3,577,528
BK	59 St (N,R)	116	3,527,847
BK	7 Av (F)	122	3,418,784
BK	Canarsie-Rockaway Pkwy (L)	124	3,393,413
BK	Nevins St (2,3,4,5)	125	3,388,788
BK	36 St (D,M,N,R)	128	3,296,936
BK	Broadway Junction (A,C,J,L,Z)	131	3,236,530
BK	4 Av (F)/9 St (M,R)	136	3,100,389
BK	86 St (R)	144	3,028,266
BK	Bergen St (F,G)	145	3,021,695
BK	Carroll St (F,G)	147	2,926,322
BK	Church Av (2,5)	148	2,918,075
BK	Church Av (F)	150	2,894,749
BK	Euclid Av (A,C)	151	2,867,762
BK	Newkirk Av (B,Q)	152	2,847,620
BK	8 Av (N)	154	2,827,654
BK	DeKalb Av (L)	158	2,754,838
BK	7 Av (B,Q)	159	2,727,645
BK	Hoyt-Schermerhorn Sts (A,C,G)	161	2,685,746
BK	Prospect Park (B,Q,S)	166	2,547,571
BK	Marcy Av (J,M,Z)	168	2,537,777
BK	Nassau Av (G)	172	2,409,331
BK	Grand Army Plaza (2,3)	174	2,387,925
BK	53 St (R)	178	2,331,514
BK	Greenpoint Av (G)	179	2,327,950
BK	Newkirk Av (2,5)	181	2,316,227

BK	Graham Av (L)	182	2,310,077
BK	Bay Ridge Av (R)	184	2,301,687
BK	Sutter Av-Rutland Rd (3)	189	2,261,573
BK	Myrtle Av (J,M,Z)	191	2,252,520
BK	45 St (R)	192	2,192,497
BK	Avenue U (Q)	196	2,117,306
BK	Flushing Av (J,M)	198	2,073,472
BK	Hoyt St (2,3)	206	2,010,615
BK	Bay Pkwy (D,M)	211	1,958,327
BK	Grant Av (A)	218	1,890,764
BK	Winthrop St (2,5)	219	1,889,691
BK	Avenue J (Q)	221	1,856,023
BK	Union St (M,R)	224	1,828,238
BK	15 St-Prospect Park (F)	228	1,809,200
BK	Grand St (L)	231	1,788,622
BK	Fort Hamilton Pkwy (N)	234	1,772,193
BK	Pennsylvania Av (3)	235	1,762,596
BK	Rockaway Av (3)	237	1,741,118
BK	Cortelyou Rd (Q)	239	1,735,244
BK	Parkside Av (Q)	240	1,724,314
BK	Bay Pkwy (N)	246	1,705,404
BK	9 Av (D,M)	247	1,700,871
BK	New Lots Av (3)	248	1,678,719
BK	High St (A,C)	249	1,675,852
BK	Prospect Av (M,R)	250	1,672,368
BK	Avenue M (Q)	251	1,662,721
BK	Sterling St (2,5)	252	1,655,935
BK	Saratoga Av (3)	254	1,645,632
BK	79 St (D,M)	257	1,628,384
BK	Clark St (2,3)	260	1,581,230
BK	Bay Ridge-95 St (R)	261	1,580,521
BK	Lawrence St (M,R)	262	1,562,494
BK	New Utrecht Av (N)/62 St (D,M)	264	1,558,351
BK	Halsey St (L)	265	1,558,058
BK	Eastern Pkwy-Brooklyn Museum (2,3)	266	1,513,677
BK	Clinton-Washington Avs (C)	267	1,512,786
BK	18 Av (D,M)	268	1,507,994
BK	Kingston-Throop Avs (C)	269	1,500,794
BK	Kingston Av (3)	270	1,493,746
BK	18 Av (N)	271	1,491,566
BK	Bedford-Nostrand Avs (G)	273	1,482,394
BK	Franklin Av (C,S)	275	1,467,208
BK	Ditmas Av (F)	279	1,449,069
BK	Rockaway Av (C)	280	1,447,347
BK	77 St (R)	282	1,434,352
BK	York St (F)	283	1,428,242
BK	Clinton-Washington Avs (G)	285	1,421,327
BK	Kings Hwy (N)	286	1,408,418
BK	Montrose Av (L)	287	1,394,241
BK	Halsey St (J)	288	1,393,164
BK	Gates Av (J,Z)	289	1,390,938
BK	Ralph Av (C)	291	1,371,497

BK	Fort Hamilton Pkwy (F)	292	1,356,642
BK	20 Av (D,M)	294	1,329,709
BK	Lafayette Av (C)	296	1,324,976
BK	18 Av (F)	299	1,272,092
BK	Jefferson St (L)	301	1,255,743
BK	Smith-9 Sts (F,G)	302	1,247,663
BK	25 Av (D)	303	1,245,091
BK	71 St (D,M)	305	1,238,499
BK	Nostrand Av (3)	306	1,221,856
BK	Morgan Av (L)	307	1,217,986
BK	Beverly Rd (2,5)	310	1,206,213
BK	Bergen St (2,3)	311	1,179,634
BK	Lorimer St (J,M)	313	1,165,645
BK	25 St (M,R)	314	1,150,852
BK	Myrtle-Willoughby Avs (G)	318	1,137,802
BK	20 Av (N)	320	1,111,079
BK	Fort Hamilton Pkwy (D,M)	323	1,100,212
BK	Neck Rd (Q)	326	1,083,747
BK	Kosciuszko St (J)	328	1,081,542
BK	Classon Av (G)	329	1,079,948
BK	Kings Hwy (F)	330	1,078,416
BK	Broadway (G)	334	1,010,646
BK	President St (2,5)	335	1,004,062
BK	Avenue U (N)	336	1,001,487
BK	Avenue N (F)	338	995,080
BK	Knickerbocker Av (M)	339	992,499
BK	50 St (D,M)	342	978,644
BK	Norwood Av (J,Z)	345	945,068
BK	Liberty Av (C)	348	933,506
BK	Ocean Pkwy (Q)	350	896,658
BK	Fulton St (G)	351	893,809
BK	Shepherd Av (C)	352	888,680
BK	Avenue X (F)	353	887,558
BK	Van Siclen Av (3)	355	874,245
BK	Beverley Rd (Q)	356	847,945
BK	Avenue P (F)	357	844,776
BK	East 105 St (L)	358	839,813
BK	Van Siclen Av (C)	359	836,888
BK	New Lots Av (L)	362	817,620
BK	Sutter Av (L)	363	812,545
BK	Crescent St (J,Z)	364	811,741
BK	Avenue H (Q)	367	797,993
BK	Wilson Av (L)	368	795,638
BK	Avenue I (F)	374	735,127
BK	Bay 50 St (D)	375	728,452
BK	Cleveland St (J)	377	704,932
BK	Chauncey St (J,Z)	378	704,068
BK	Park Pl (S)	380	697,221
BK	West 8 St-New York Aquarium (F,Q)	385	680,560
BK	Avenue U (F)	387	659,851
BK	86 St (N)	388	653,229
BK	Hewes St (J,M)	389	646,500

BK	Junius St (3)	390	633,760
BK	Cypress Hills (J)	392	593,808
BK	55 St (D,M)	393	593,330
BK	Central Av (M)	394	593,241
BK	Flushing Av (G)	395	591,626
BK	Alabama Av (J)	396	581,954
BK	Van Siclen Av (J,Z)	400	523,111
BK	Livonia Av (L)	402	512,426
BK	Neptune Av (F)	405	488,886
BK	Bay Pkwy (F)	410	426,546
BK	Atlantic Av (L)	413	293,079
BK	Bushwick Av-Aberdeen St (L)	417	270,326
BK	Atlantic Av (2,3,4,5)	*See Downtown Brooklyn Transfer: Atlantic Av (B,Q,2,3,4,5)/Pacific St (D,M,N,R)*	
BK	Atlantic Av-Pacific St (D,M,N,R)	*See Downtown Brooklyn Transfer: Atlantic Av (B,Q,2,3,4,5)/Pacific St (D,M,N,R)*	
BK	Atlantic Av (B,Q)	*See Downtown Brooklyn Transfer: Atlantic Av (B,Q,2,3,4,5)/Pacific St (D,M,N,R)*	
BK	Borough Hall (2,3,4,5)	*See Downtown Brooklyn Transfer: Court St (M,R)/Borough Hall (2,3,4,5)*	
BK	Court St (M,R)	*See Downtown Brooklyn Transfer: Court St (M,R)/Borough Hall (2,3,4,5)*	
BK	DeKalb Av (M,R)	*See Downtown Brooklyn Transfer: DeKalb Av (B,M,Q,R)*	
BK	DeKalb Av (B,Q)	*See Downtown Brooklyn Transfer: DeKalb Av (B,M,Q,R)*	
BK	Hoyt-Schermerhorn Sts (A,C)	*See Downtown Brooklyn Transfer: Hoyt-Schermerhorn Sts (A,C,G)*	
BK	Hoyt-Schermerhorn Sts (G)	*See Downtown Brooklyn Transfer: Hoyt-Schermerhorn Sts (A,C,G)*	
BK	Jay St-Borough Hall (F)	*See Downtown Brooklyn Transfer: Jay St-Borough Hall (A,C,F)*	
BK	Jay St-Borough Hall (A,C)	*See Downtown Brooklyn Transfer: Jay St-Borough Hall (A,C,F)*	
BK	9 St (M,R)	*See Other Brooklyn Transfer: 4 Av (F)/9 St (M,R)*	
BK	4 Av (F)	*See Other Brooklyn Transfer: 4 Av (F)/9 St (M,R)*	
BK	Broadway Junction (A,C)	*See Other Brooklyn Transfer: Broadway Junction (A,C,J,L,Z)*	
BK	Broadway Junction (J,Z)	*See Other Brooklyn Transfer: Broadway Junction (A,C,J,L,Z)*	
BK	Broadway Junction (L)	*See Other Brooklyn Transfer: Broadway Junction (A,C,J,L,Z)*	
BK	Stillwell Ave.-Coney Island (N)	*See Other Brooklyn Transfer: Coney Island-Stillwell Av (D,F,N,Q)*	
BK	Coney Island-Stillwell Av (D)	*See Other Brooklyn Transfer: Coney Island-Stillwell Av (D,F,N,Q)*	
BK	Coney Island-Stillwell Av (Q)	*See Other Brooklyn Transfer: Coney Island-Stillwell Av (D,F,N,Q)*	
BK	Coney Island-Stillwell Av (F)	*See Other Brooklyn Transfer: Coney Island-Stillwell Av (D,F,N,Q)*	
BK	Franklin Av (2,3,4,5)	*See Other Brooklyn Transfer: Franklin Av (2,3,4,5)/Botanic Garden (S)*	
BK	Botanic Garden (S)	*See Other Brooklyn Transfer: Franklin Av (2,3,4,5)/Botanic Garden (S)*	
BK	Franklin Av (S)	*See Other Brooklyn Transfer: Franklin Av (C,S)*	
BK	Franklin Av (C)	*See Other Brooklyn Transfer: Franklin Av (C,S)*	
BK	Metropolitan Av (G)	*See Other Brooklyn Transfer: Metropolitan Av (G)/Lorimer St (L)*	

BK	Lorimer St (L)	*See Other Brooklyn Transfer: Metropolitan Av (G)/Lorimer St (L)*	
BK	Myrtle-Wyckoff Avs (M)	*See Other Brooklyn Transfer: Myrtle-Wyckoff Avs (L,M)*	
BK	Myrtle-Wyckoff Avs (L)	*See Other Brooklyn Transfer: Myrtle-Wyckoff Avs (L,M)*	
BK	New Utrecht Av (N)	*See Other Brooklyn Transfer: New Utrecht Av (N)/62 St (D,M)*	
BK	62 St (D,M)	*See Other Brooklyn Transfer: New Utrecht Av (N)/62 St (D,M)*	
BK	Prospect Park (B,Q)	*See Other Brooklyn Transfer: Prospect Park (B,Q,S)*	
BK	Prospect Park (S)	*See Other Brooklyn Transfer: Prospect Park (B,Q,S)*	
BK	West 8 St-New York Aquarium (Q)	*See Other Brooklyn Transfer: West 8 St-New York Aquarium (F,Q)*	
BK	West 8 St-New York Aquarium (F)	*See Other Brooklyn Transfer: West 8 St-New York Aquarium (F,Q)*	
BX	**161 St-Yankee Stadium (B,D,4)**	**39**	**7,462,504**
BX	**3 Av-149 St (2,5)**	**49**	**6,794,193**
BX	**Parkchester (6)**	**91**	**4,430,791**
BX	Fordham Rd (B,D)	114	3,585,680
BX	Fordham Rd (4)	133	3,193,333
BX	149 St-Grand Concourse (2,4,5)	137	3,096,279
BX	Hunts Point Av (6)	138	3,088,334
BX	Tremont Av (B,D)	155	2,796,937
BX	167 St (B,D)	156	2,782,661
BX	Kingsbridge Rd (4)	157	2,780,902
BX	167 St (4)	163	2,640,679
BX	Mosholu Pkwy (4)	165	2,621,633
BX	Simpson St (2,5)	167	2,545,082
BX	170 St (4)	171	2,411,412
BX	Kingsbridge Rd (B,D)	183	2,305,026
BX	West Farms Sq-East Tremont Av (2,5)	193	2,149,787
BX	Norwood-205 St (D)	194	2,141,876
BX	Bedford Park Blvd (B,D)	199	2,062,987
BX	Castle Hill Av (6)	201	2,039,260
BX	3 Av-138 St (6)	203	2,031,493
BX	Burnside Av (4)	204	2,020,817
BX	Elder Av (6)	207	2,007,213
BX	Prospect Av (2,5)	208	1,970,278
BX	Pelham Pkwy (2,5)	210	1,959,901
BX	170 St (B,D)	212	1,939,039
BX	183 St (4)	214	1,922,683
BX	174 St (2,5)	215	1,913,276
BX	Morrison-Sound View Avs (6)	216	1,902,744
BX	231 St (1)	220	1,856,137
BX	Pelham Bay Park (6)	225	1,825,667
BX	East 180 St (2,5)	226	1,811,514
BX	Van Cortlandt Park-242 St (1)	227	1,811,283
BX	Westchester Square-E Tremont Av (6)	229	1,798,056
BX	Brook Av (6)	241	1,722,026
BX	Gun Hill Rd (5)	243	1,717,442

BX	Gun Hill Rd (2,5)	255	1,644,660
BX	176 St (4)	256	1,633,856
BX	Woodlawn (4)	259	1,594,128
BX	Mt Eden Av (4)	263	1,558,846
BX	182-183 Sts (B,D)	274	1,476,142
BX	Allerton Av (2,5)	278	1,449,177
BX	174-175 Sts (B,D)	281	1,441,796
BX	Jackson Av (2,5)	284	1,424,610
BX	East 149 St (6)	293	1,331,444
BX	225 St (2,5)	300	1,265,222
BX	St Lawrence Av (6)	309	1,209,919
BX	238 St (1)	312	1,179,502
BX	Wakefield-241 St (2)	319	1,132,407
BX	Eastchester-Dyre Av (5)	321	1,107,354
BX	Baychester Av (5)	325	1,085,754
BX	233 St (2,5)	331	1,056,953
BX	Longwood Av (6)	333	1,017,825
BX	Bedford Park Blvd-Lehman College (4)	337	996,516
BX	Burke Av (2,5)	343	974,624
BX	Cypress Av (6)	344	972,373
BX	Freeman St (2,5)	346	944,658
BX	Pelham Pkwy (5)	360	830,675
BX	Bronx Park East (2,5)	361	828,281
BX	Buhre Av (6)	369	791,940
BX	Intervale Av (2,5)	370	776,002
BX	138 St-Grand Concourse (4,5)	372	764,138
BX	Nereid Av (2,5)	382	690,663
BX	Zerega Av (6)	384	683,731
BX	Morris Park (5)	398	554,611
BX	219 St (2,5)	401	513,898
BX	Whitlock Av (6)	407	476,628
BX	Middletown Rd (6)	409	448,953
BX	East 143 St-St Mary's St (6)	416	273,671
BX	149 St-Grand Concourse (4)	*See Upper Manhattan/Bronx Transfer: 149 St-Grand Concourse (2,4,5)*	
BX	149 St-Grand Concourse (2,5)	*See Upper Manhattan/Bronx Transfer: 149 St-Grand Concourse (2,4,5)*	
BX	161 St-Yankee Stadium (4)	*See Upper Manhattan/Bronx Transfer: 161 St-Yankee Stadium (B,D,4)*	
BX	161 St-Yankee Stadium (B,D)	*See Upper Manhattan/Bronx Transfer: 161 St-Yankee Stadium (B,D,4)*	
QN	**Flushing-Main St (7)**	**11**	**17,818,980**
QN	**74-Bway (7)/Jackson Hts-Roosevelt Av (E,F,G,R,V)**	**16**	**14,759,672**
QN	**Jamaica Center-Parsons-Archer (E,J,Z)**	**20**	**11,259,917**
QN	Forest Hills-71 Av (E,F,G,R,V)	35	8,123,956
QN	Kew Gardens-Union Turnpike (E,F)	38	7,630,925
QN	Woodhaven Blvd (G,R,V)	44	7,121,569
QN	Jamaica-179 St (F)	51	6,696,942
QN	Junction Blvd (7)	52	6,657,782
QN	Sutphin Blvd-Archer Av-JFK Airport (E,J,Z)	59	5,831,016

QN	90 St-Elmhurst Av (7)	63	5,513,425
QN	82 St-Jackson Hts (7)	64	5,481,685
QN	Grand Av-Newtown (G,R,V)	66	5,428,004
QN	103 St-Corona Plaza (7)	73	5,142,820
QN	Woodside-61 St (7)	74	5,094,745
QN	23 St-Ely Av (E,V)/Long Island City-Court Sq (G)	75	5,077,573
QN	Astoria-Ditmars Blvd (N,W)	79	4,941,924
QN	63 Dr-Rego Park (G,R,V)	82	4,797,795
QN	46 St-Bliss St (7)	87	4,499,243
QN	Steinway St (G,R,V)	94	4,355,617
QN	Elmhurst Av (G,R,V)	99	4,198,892
QN	30 Av (N,W)	100	4,173,798
QN	Broadway (N,W)	104	4,057,520
QN	33 St-Rawson St (7)	127	3,306,979
QN	Astoria Blvd (N,W)	129	3,266,184
QN	40 St-Lowery St (7)	130	3,249,075
QN	111 St (7)	139	3,077,946
QN	46 St (G,R,V)	149	2,904,102
QN	67 Av (G,R,V)	160	2,719,842
QN	45 Rd-Court House Sq (7)	162	2,673,323
QN	Queensboro Plaza (N,W,7)	164	2,622,553
QN	169 St (F)	173	2,404,252
QN	Ozone Park-Lefferts Blvd (A)	187	2,281,696
QN	Queens Plaza (E,G,R,V)	188	2,264,150
QN	36 Av (N,W)	190	2,259,276
QN	Northern Blvd (G,R,V)	195	2,137,222
QN	21 St-Queensbridge (F)	197	2,101,042
QN	52 St (7)	200	2,039,685
QN	Rockaway Blvd (A)	202	2,034,344
QN	Vernon Blvd-Jackson Av (7)	205	2,016,912
QN	Briarwood-Van Wyck Blvd (E,F)	230	1,794,900
QN	Parsons Blvd (F)	232	1,782,783
QN	Hunters Point Av (7)	233	1,773,821
QN	Willets Point-Shea Stadium (7)	238	1,735,867
QN	69 St (7)	253	1,646,525
QN	Jamaica-Van Wyck (E)	276	1,466,843
QN	Sutphin Blvd (F)	290	1,377,422
QN	Fresh Pond Rd (M)	295	1,328,877
QN	Far Rockaway-Mott Av (A)	297	1,300,501
QN	80 St (A)	308	1,215,401
QN	Woodhaven Blvd (J,Z)	315	1,147,011
QN	75 Av (E,F)	316	1,141,863
QN	85 St-Forest Pkwy (J)	322	1,105,465
QN	75 St (J,Z)	324	1,094,080
QN	Forest Av (M)	332	1,020,734
QN	65 St (G,R,V)	340	987,693
QN	Middle Village-Metropolitan Av (M)	341	980,228
QN	36 St (G,R,V)	349	910,220
QN	Howard Beach-JFK Airport (A)	354	879,258

QN	111 St (A)	365	808,656
QN	111 St (J)	371	767,389
QN	88 St (A)	373	748,114
QN	Beach 60 St (A)	376	716,916
QN	104 St (J,Z)	379	702,374
QN	Seneca Av (M)	386	668,875
QN	39 Av (N,W)	391	629,063
QN	121 St (J,Z)	397	564,201
QN	104 St (A)	399	546,821
QN	Beach 67 St (A)	403	512,214
QN	Beach 25 St (A)	406	483,783
QN	Beach 90 St (A,S)	408	450,634
QN	Rockaway Park-Beach 116 St (A,S)	411	309,175
QN	Beach 98 St (A,S)	412	307,880
QN	21 St (G)	414	275,914
QN	Aqueduct-North Conduit Av (A)	415	273,839
QN	Beach 36 St (A)	418	252,933
QN	Beach 44 St (A)	419	139,454
QN	Broad Channel (A,S)	420	103,502
QN	Beach 105 St (A,S)	421	81,776
QN	Aqueduct Racetrack (A)	422	39,081
QN	Long Island City-Court Sq (G)	*See Queens Transfer: 23 St-Ely Av (E,V)/Long Island City-Court Sq (G)*	
QN	23 St-Ely Av (E,V)	*See Queens Transfer: 23 St-Ely Av (E,V)/Long Island City-Court Sq (G)*	
QN	Jackson Hts-Roosevelt Av (E,F,G,R,V)	*See Queens Transfer: 74-Bway (7)/Jackson Hts-Roosevelt Av (E,F,G,R,V)*	
QN	74 St-Broadway (7)	*See Queens Transfer: 74-Bway (7)/Jackson Hts-Roosevelt Av (E,F,G,R,V)*	
QN	Jamaica Center-Parsons-Archer (E)	*See Queens Transfer: Jamaica Center-Parsons-Archer (E,J,Z)*	
QN	Jamaica Center-Parsons-Archer (J,Z)	*See Queens Transfer: Jamaica Center-Parsons-Archer (E,J,Z)*	
QN	Queensboro Plaza (7)	*See Queens Transfer: Queensboro Plaza (N,W,7)*	
QN	Queensboro Plaza (N,W)	*See Queens Transfer: Queensboro Plaza (N,W,7)*	
QN	Sutphin Blvd-Archer Av-JFK Airport (E,J,Z)	*See Queens Transfer: Sutphin Blvd-Archer Av-JFK Airport (E,J,Z)*	

Appendix B

Asthma Hospitalizations, New York City, By UHF Neighborhood, Age 0-14 Years

Source: SPARCS data, July, 2005 update for 2004 hospitalizations. April 2005 update for all other years.
* Relative Standard Error is > 30% indicating low reliability

	Year													
	1994		1997		2000		2003		2004		% change			
Neighborhood	N	Rate per 1,000	N	Rate per 1,000	N	Rate per 1,000	N	Rate per 1,000	N	Rate per 1,000	1994-2004	1997-2004	2000-2004	2003-2004
Kingsbridge	84	5.7	99	6.6	72	4.7	65	4.2	72	4.7	-18%	-29%	0%	12%
Northeast Bronx	277	8.5	344	9.5	305	7.7	385	9.7	308	7.8	-8%	-18%	1%	-20%
Fordham-Bronx Pk	851	14.8	970	15.7	603	9.1	695	10.5	717	10.8	-27%	-31%	19%	3%
Pelham-Throgs Neck	654	11.4	771	12.6	572	8.8	644	9.9	571	8.8	-23%	-30%	0%	-11%
Crotona-Tremont	905	15.8	959	16.3	583	9.6	805	13.3	665	11.0	-30%	-33%	15%	-17%
Highbridge-Morrisania	937	18.1	1000	18.6	621	11.1	690	12.3	527	9.4	-48%	-49%	-15%	-24%
Hunts Point-Mott Haven	698	20.4	798	22.6	367	10.1	310	8.5	269	7.4	-64%	-67%	-27%	-13%
Bronx	4406	14.5	4941	15.4	3123	9.3	3595	10.7	3130	9.3	-36%	-40%	0%	-13%
Greenpoint	173	5.8	120	4.0	66	2.2	83	2.8	85	2.9	-50%	-28%	32%	4%
Downtown-Heights-Slope	431	11.6	333	9.1	175	4.9	200	5.6	163	4.5	-61%	-51%	-8%	-20%
Bedford Stuyvesant-Crown Hgts	1100	13.8	1120	14.0	789	9.8	972	12.1	818	10.2	-26%	-27%	4%	-16%
East New York	620	13.2	591	12.3	436	8.9	531	10.8	447	9.1	-31%	-26%	2%	-16%
Sunset Park	208	8.5	183	7.1	87	3.2	77	2.8	67	2.5	-71%	-65%	-22%	-11%
Borough Park	178	2.6	183	2.5	104	1.3	93	1.2	101	1.3	-50%	-48%	0%	8%
East Flatbush-Flatbush	775	10.3	761	10.2	535	7.2	588	7.9	531	7.2	-30%	-29%	0%	-9%
Canarsie-Flatlands	220	6.2	236	6.0	166	3.8	206	4.8	198	4.6	-26%	-23%	21%	-4%
Bensonhurst-Bay Ridge	66	2.4	71	2.4	33	1.0	50	1.6	39	1.2	-50%	-50%	20%	-25%
Coney Island	225	4.7	183	3.7	114	2.2	147	2.8	100	1.9	-60%	-49%	-14%	-32%
Williamsburg-Bushwick	780	14.2	704	12.9	550	10.1	622	11.4	659	12.1	-15%	-6%	20%	6%
Brooklyn	4778	9.1	4486	8.3	3055	5.5	3571	6.4	3208	5.8	-36%	-30%	5%	-9%
Washington Heights-Inwood	449	7.8	537	9.2	293	5.0	294	5.0	234	4.0	-49%	-57%	-20%	-20%
Central Harlem	577	18.8	667	20.9	424	12.8	456	13.8	413	12.5	-34%	-40%	-2%	-9%
East Harlem	1001	40.2	733	29.2	436	17.2	358	14.1	332	13.1	-67%	-55%	-24%	-7%
Upper West Side	147	6.0	158	6.4	91	3.6	116	4.6	82	3.2	-47%	-50%	-11%	-30%
Upper East Side	79	3.8	88	4.0	41	1.8	61	2.6	44	1.9	-50%	-53%	6%	-27%
Chelsea-Clinton	83	9.3	127	14.4	63	7.3	61	7.0	52	6.0	-35%	-58%	-18%	-14%
Gramercy Park-Murray Hill	47	6.8	48	6.7	28	3.7	26	3.5	22	2.9	-57%	-57%	-22%	-17%
Geenwich Village-SoHo	24	3.4	21	3.0	12	1.7 *	13	1.8 *	14	2.0	-41%	-33%	18%	11%
Union Square	301	11.5	243	9.6	115	4.7	133	5.4	118	4.8	-58%	-50%	2%	-11%
Lower Manhattan	11	3.3 *	12	3.5 *	12	3.5 *	15	4.4	12	3.5 *	6%	0%	0%	-20%
Manhattan	2721	12.9	2638	12.3	1517	6.9	1533	7.0	1324	6.1	-53%	-50%	-12%	-13%

Asthma Hospitalizations, New York City, By UHF Neighborhood, Age 0-14 Years

Source: SPARCS data, July, 2005 update for 2004 hospitalizations. April 2005 update for all other years.
* Relative Standard Error is > 30% indicating low reliability

	Year													
	1994		1997		2000		2003		2004		% change			
Neighborhood	N	Rate per 1,000	N	Rate per 1,000	N	Rate per 1,000	N	Rate per 1,000	N	Rate per 1,000	1994-2004	1997-2004	2000-2004	2003-2004
Long Island City-Astoria	202	6.3	216	6.3	173	4.8	142	3.9	113	3.1	-51%	-51%	-35%	-21%
Western Queens	569	7.7	556	6.8	390	4.4	383	4.3	321	3.6	-53%	-47%	-18%	-16%
Flushing	175	4.5	134	3.3	148	3.5	146	3.5	147	3.5	-22%	6%	0%	0%
Bayside-Little Neck	25	1.9	19	1.4	27	1.9	27	1.9	28	2.0	5%	43%	5%	5%
Ridgewood	164	4.7	185	4.9	156	3.8	183	4.5	160	3.9	-17%	-20%	3%	-13%
Fresh Meadows	73	4.6	62	3.7	83	4.7	55	3.1	57	3.2	-30%	-14%	-32%	3%
Southwest Queens	267	5.7	356	6.8	245	4.3	340	5.9	248	4.3	-25%	-37%	0%	-27%
Jamaica	518	9.2	551	9.3	422	6.8	501	8.0	452	7.3	-21%	-22%	7%	-9%
Southeast Queens	260	6.9	269	6.7	204	4.8	222	5.3	198	4.7	-32%	-30%	-2%	-11%
Rockaway	126	5.2	203	8.1	196	7.6	230	8.9	221	8.5	63%	5%	12%	-4%
Queens	2388	6.4	2555	6.4	2051	4.8	2233	5.2	1948	4.6	-28%	-28%	-4%	-12%
Port Richmond	65	4.8	89	6.0	61	3.8	80	4.9	68	4.2	-13%	-30%	11%	-14%
Stapletone-St George	102	4.7	113	4.9	94	3.8	120	4.9	97	3.9	-17%	-20%	3%	-20%
Willowbrook	30	1.8	48	2.9	27	1.6	27	1.6	31	1.9	6%	-34%	19%	19%
South Beach-Tottenville	47	1.4	81	2.3	58	1.6	71	1.9	43	1.2	-14%	-48%	-25%	-37%
Richmond	244	2.9	331	3.7	240	2.5	298	3.1	239	2.5	-14%	-32%	0%	-19%
New York City	14537	9.7	14951	9.5	9986	6.1	11230	6.9	9849	6.0	-38%	-37%	-2%	-13%