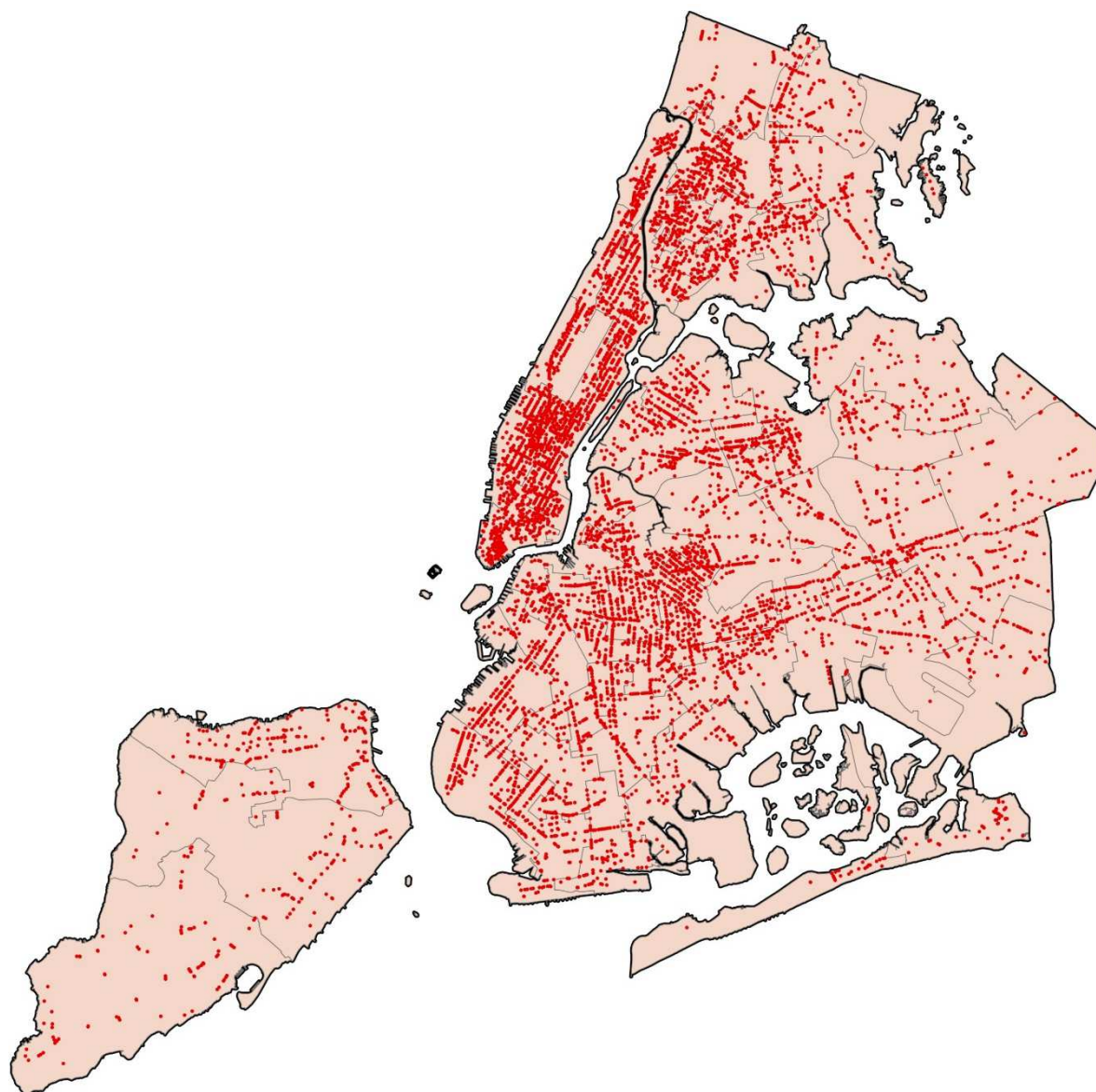


OVERSATURATED

HOW AN OVERSATURATION OF LICENSED TOBACCO RETAIL OUTLETS IN
NEW YORK CITY IS IMPACTING PUBLIC HEALTH



Acknowledgements

Written by Michael Davoli of the American Cancer Society Cancer Action Network. The author thanks Deanna Henkle, Oscar Feliciano, Aleksey Bilogur, Cathy Callaway, Lucy Miller, Marc Kaplan, Kimberly Walsh and Anne Miller who contributed to this work. A special thank you goes to Dr. Jochen Albrecht for his analysis and maps. Without Dr. Albrecht this report never would have been possible.

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ACS CAN, the nonprofit, nonpartisan advocacy affiliate of the American Cancer Society, supports evidence-based policy and legislative solutions designed to eliminate cancer as a major health problem. ACS CAN works to encourage elected officials and candidates to make cancer a top national priority. ACS CAN gives ordinary people extraordinary power to fight cancer with the training and tools they need to make their voices heard.

Download the full report at:

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EXECUTIVE SUMMARY

The following report examines existing public data in regards to the health of New Yorkers, tobacco use in New York City and the oversaturation of licensed tobacco retail outlets in New York City, and presents detailed recommendations from the American Cancer Society Cancer Action Network (ACS CAN) on how to best address the oversaturation.

The Problem:

Between 2005-2014 the five leading causes of premature death in New York City were cancer, heart disease, unintentional injury, diabetes and chronic lower respiratory diseases. While many factors lead to these causes of premature death, no single factor contributes to premature deaths in New York City more than the use of tobacco. Tobacco use is the number one cause of preventable death in New York City, killing approximately 12,000 people each year.

In addition to lung and bronchus cancer, smoking causes more than a dozen different types of cancer. While lung and bronchus cases do not account for the largest percentage of cancer cases, they do result in more cancer deaths than cancers at any other site. Nearly 80 percent of cases of lung and bronchus cancer are tobacco-related. This is especially troubling since these cases are preventable by simply not using tobacco.

The impact of tobacco use goes beyond the toll it takes on public health. New York state residents' annual tax burden from smoking-related government spending on healthcare is \$1,488 per household.

In an effort to turn the tide on lung and bronchus cancer and other smoking-related illnesses, New York City has led a successful effort for more than a decade to reduce smoking rates. By increasing the price of tobacco products, implementing comprehensive smoke-free and tobacco-free policies and funding evidence-based, citywide tobacco use prevention and cessation programs, New York City has driven smoking rates to historic lows and protected our communities from secondhand smoke.

Despite these efforts, 14.3 percent of residents (approximately 950,000 people) still smoke, and significant disparities persist by education, household income, race and ethnicity, housing status and other demographics. Significant disparities in smoking rates are also found when comparing boroughs and neighborhoods.

Recent studies demonstrate that close proximity to tobacco stores make it harder for smokers to quit and that teens who live in areas with higher tobacco outlet density are more likely to have tried smoking, and more likely to think that more adults smoke.

Currently, there are nearly 9,000 licensed tobacco retail outlets citywide. Across the five boroughs, licensed tobacco retail outlets can be found on nearly every corner and every block. In dense urban neighborhoods, tobacco retail outlets often feature signs that

promote tobacco products and pricing. Sidewalks are littered with cigarette butts and city residents and visitors' ability to breathe smoke-free air is compromised.

Significant disparities in the number of retail outlets in relation to the population are also found when comparing boroughs and neighborhoods. Midtown and lower Manhattan, parts of the Bronx and a majority of Brooklyn are home to the highest density of tobacco retail outlets.

The Youth Factor

In far too many New York City neighborhoods, a child is more likely to walk past tobacco retail outlets than libraries or playgrounds. There is approximately one licensed tobacco retail outlet for every 196 children in New York City. Meanwhile there is approximately one playground for every 1,765 children and one public library for every 8,613 children in New York City.

Widespread availability of tobacco in our communities dangerously normalizes tobacco use. Each year in New York state, 22,500 youth under the age of 18 become regular daily smokers and 31.6 million packs of cigarettes are bought or smoked by New York youth.

The cost, accessibility and limits on where tobacco may be used play a significant role in smoking rates. While requirements for minimum prices and restrictions on tobacco use have been in effect for some time, the continued widespread and unfettered availability of tobacco in New York City is a major factor contributing to the number of youth who become smokers each year.

The tobacco industry spends enormous sums of money in New York State to market its products in places where young people shop, like retail stores near schools. More than two-thirds of licensed tobacco retail outlets are within 1,000 feet of a school in New York City. The overwhelming majority of licensed tobacco retail outlets are within 1,000 feet of another licensed tobacco retail outlet, exacerbating the impact that tobacco has on our neighborhoods.

The Solutions

There are many approaches to reducing the oversaturation of tobacco retail outlets. Research and experiences in other municipalities have shown the best approaches are:

- Cap and gradually reduce the number of tobacco retail licenses available in a community;
- Set a minimum distance between tobacco retail outlets and schools, other youth service entities and other licensed tobacco retail outlets;
- Restrict sales in pharmacies and other health service entities.

Establishing a cap on the number of tobacco retail outlets and restricting the location and type of retail outlets permitted to sell tobacco will reduce the number of outlets where community members can access or be exposed to deadly tobacco. In addition to improving health for everyone, establishing these types of restrictions on licensed tobacco retail outlets protects low income communities and communities of color that often have

a disproportionately high number of tobacco retail outlets in their neighborhoods, as well as disproportionately higher smoking rates. Similar approaches have been successfully adopted in various communities including San Francisco, Chicago and Philadelphia.

While reducing the number and density of licensed tobacco retail outlets is not a silver bullet and will not end all tobacco use, municipalities looking for ways to further reduce tobacco use can look at both research and practical examples for how to use licensing and zoning rules to reduce the impact of tobacco retail outlets.

FINDINGS

FINDING: Tobacco use is the number one cause of preventable death and disease in New York City, killing approximately 12,000 people each year.¹

FINDING: Lung and bronchus cases account for 10.8 percent of cancer cases and 22.1 percent of cancer deaths in New York City. Between 2009-2013 there were 4,255 cases of lung and bronchus cancer in New York City and 2,752 deaths from of lung and bronchus cancer.² Nearly 80 percent of cases of lung and bronchus cancer are tobacco related.³

FINDING: Citywide, nearly 80 percent of smokers are either non-daily smokers (41.4 percent) or light daily smokers (37.5 percent), while heavy smokers make up only 21.1 percent of smokers.⁴ See page 46 for definitions of each type.

FINDING: As of October 1, 2016, there were 8,992 licensed tobacco retail outlets citywide, including 1,542 in the Bronx, 2,725 in Brooklyn, 2,196 in Manhattan, 2,117 in Queens and 412 on Staten Island⁵

FINDING: The number of licensed tobacco retail outlets citywide is three times more than the total number of the top 10 corporate chain stores combined (2,984)⁶, three and a half times more than the number of pizzerias (approximately 2,500)⁷, three times more than the number of public, private, charter and parochial schools (approximately 2,619)⁸ and 29 times more than the number of Starbucks (307)⁹ in New York City.

FINDING: There is approximately one licensed tobacco retail outlet for every 196 children¹⁰ in New York City. Meanwhile there is approximately one playground for every 1,765 children¹¹ and one public library for every 8,613¹² children in New York City.

FINDING: Citywide, there is a licensed tobacco detailer every five blocks or 1,312 feet.¹³

FINDING: There are 342 licensed tobacco retail outlets within 200 feet of a school, 2,909 licensed tobacco retail outlets within 500 feet of a school and 6,778 licensed tobacco retail outlets within 1,000 feet of a school in New York City.¹⁴

FINDING: There are 4,920 licensed tobacco retail outlets within 200 feet of another licensed tobacco retail outlet, 7,843 licensed tobacco retail outlets within 500 feet of another licensed tobacco retail outlet and 8,442 licensed tobacco retail outlets within 1,000 feet of another licensed tobacco retail outlet.¹⁵

FINDING: There are approximately 600 pharmacies in New York City that currently hold tobacco retail licenses.¹⁶

ACS CAN POLICY RECOMMENDATIONS

The New York City Department of Health and Mental Hygiene has achieved significant declines in youth and adult smoking rates since 2002 by implementing a five-point plan consisting of taxation, legislation, cessation, education and evaluation. Despite these historic efforts and the progress that has been made in reducing tobacco use, there remains a clear need to address the oversaturation of licensed tobacco retail outlets in New York City. ACS CAN recommends five steps that New York City should take to address this problem.

- 1) Establish a cap on retail tobacco licenses:** New York City should establish a cap on the number of retail tobacco licenses in each community district at 50 percent of their current level. No new licenses should be issued in a community district until the number of licenses in that community district is at or below the newly established cap.
- 2) Restrict access near youth-service entities:** New York City should prohibit new tobacco retail licenses from being issued to any new applicant located within 1,000 feet of schools, houses of worship, playgrounds, libraries and other youth-service entities.
- 3) Restrict retail outlet proximity to each other:** New York City should prohibit new tobacco retail licenses from being issued to any new applicant located within 1,000 feet of a current licensed tobacco retail outlet.
- 4) Restrict all tobacco sales in pharmacies:** All retail stores that contain a pharmacy or other places of business that provide any form of health service should be prohibited from selling tobacco.
- 5) Include other tobacco products:** The current tobacco retail license in New York City does not cover the sale of tobacco products other than cigarettes, cigars or cigarillos. The licensing requirement should be extended to all tobacco products, including e-cigarettes.

THE HEALTH OF ALL NEW YORKERS

Premature mortality—death before the age of 65—is closely tied to poverty and a lack of access to critical services.¹⁷ There are significantly more premature deaths among certain racial/ethnic groups and in certain neighborhoods.¹⁸ In 2013, the age-adjusted premature mortality rate per 100,000 deaths was 276.1 for black Non-Hispanic New Yorkers, 188.2 for white Non-Hispanic New Yorkers, 160.3 for Hispanic New Yorkers, and 98.5 for Asian New Yorkers.¹⁹

New Yorkers of all racial/ethnic backgrounds have the leading sources of premature death in common. Between 2005-2014 the five leading causes of premature death in New York State were cancer, heart disease, unintentional injury, diabetes and chronic lower respiratory diseases. **(Figure 1)**²⁰

Figure 1

Year and # of Premature Deaths	#1 Cause of Premature Death and # of Premature Deaths Age-adjusted Premature Death Rate	#2 Cause of Premature Death and # of Premature Deaths Age-adjusted Premature Death Rate	#3 Cause of Premature Death and # of Premature Deaths Age-adjusted Premature Death Rate	#4 Cause of Premature Death and # of Premature Deaths Age-adjusted Premature Death Rate	#5 Cause of Premature Death and # of Premature Deaths Age-adjusted Premature Death Rate
2014 Total: 22,744	Cancer 6,974 total 81 per 100,000	Heart Disease 5,241 total 60 per 100,000	Unintentional Injury 1,315 total 17 per 100,000	Diabetes 879 total 12 per 100,000	Chronic Lower Respiratory Diseases (CLRD) 637 total 7 per 100,000

Source: New York State Department of Health, Leading Causes of Premature Death²¹

There are many different behaviors contributing to these causes of premature death. However, tobacco use contributes more to premature deaths in New York City than any other behavior.²² Tobacco use is the number one cause of preventable death and disease in New York City, killing approximately 12,000 people each year²³. Between 2005-2009, approximately 38,000 New Yorkers died from smoking.²⁴ That is almost two times the capacity of Madison Square Garden.

Health Impact of Tobacco

Smoking causes numerous diseases, including cancer, and puts smokers at a higher risk of many health problems.²⁵ Smoking causes heart disease, stroke, aortic aneurysm, chronic obstructive pulmonary disease (COPD)-(chronic bronchitis and emphysema), diabetes, osteoporosis, rheumatoid arthritis, age-related macular degeneration and cataracts, and worsens asthma symptoms in adults. Smokers have a higher risk of developing pneumonia, tuberculosis, and other airway infections. In addition, smoking causes inflammation and impairs immune function.

SMOKING AND CANCER

Smoking is a leading cause of cancer and death from cancer. It causes cancers of the lung, esophagus, larynx, mouth, throat, kidney, bladder, liver, pancreas, stomach, cervix, colon and rectum, as well as acute myeloid leukemia.²⁶ In New York City, the four leading cancer sites are colon, lung and bronchus, female breast and prostate.

Those four cancer sites represent 48.5 percent of all new cancer cases and 46.5 percent of all cancer deaths in New York City. **(Figure 2 & 3)**²⁷ While lung and bronchus cases account for 10.8 percent of cancer cases, they account for 22.1 percent of cancer deaths. Between 2009-2013 there were 4,255 cases of lung and bronchus cancer in New York City and 2,752 deaths from lung and bronchus cancer.

Nearly 80 percent of cases of lung and bronchus cancer are tobacco related.²⁸

Figure 2

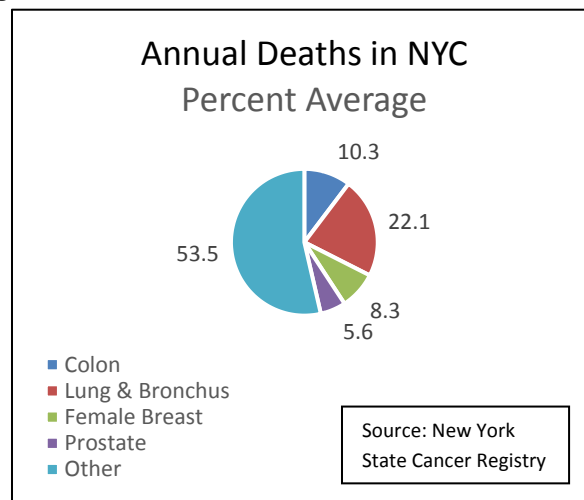
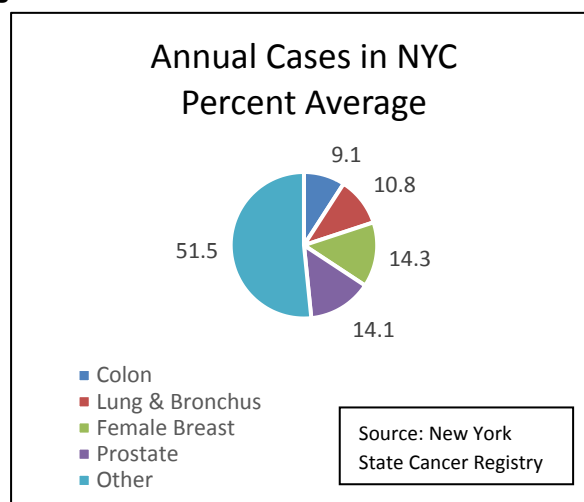


Figure 3



ECONOMIC IMPACT OF TOBACCO

The impact of tobacco use goes beyond the public health toll. The annual health care cost in government expenditures in New York State directly caused by smoking is \$10.39 billion.²⁹ Lower income New Yorkers who smoke suffer disproportionately due to the high cost of tobacco. New York state residents' tax burden from smoking-related healthcare government expenditure is \$1,488 per household annually. **(Figure 4)**³⁰

Helping a lower income pack-a-day smoker quit would, on average, free up more than \$1,494³¹ **(Figure 4)** per year that he or she previously spent on cigarettes. The results of this saving could be life changing for a low income family, as lower-income smokers spend a larger portion of their income on tobacco products and related costs than higher-income smokers. Reductions to other smoking-caused costs would add to this benefit, making lower-income households more secure.

Figure 4



Source: Campaign For Tobacco Free Kids³²

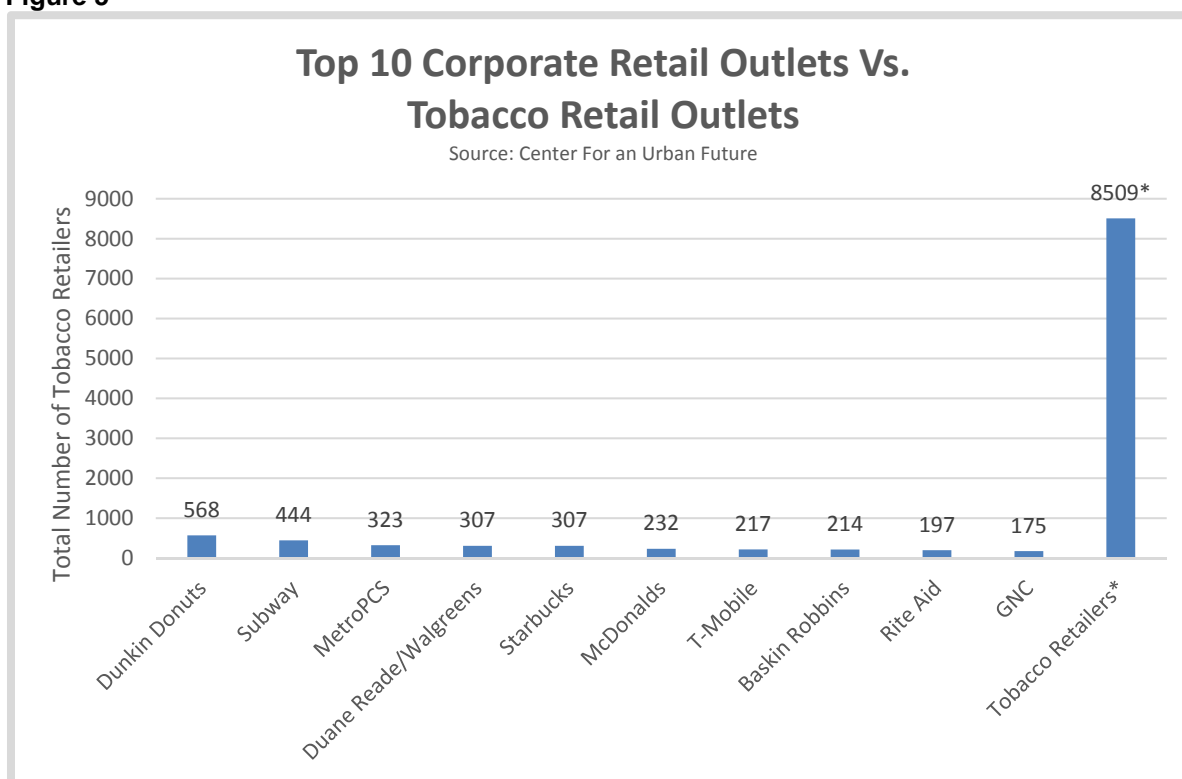
THE OVERSATURATION OF TOBACCO RETAIL OUTLETS IN NEW YORK CITY

Millions of New Yorkers are surrounded by tobacco due to the overwhelming number of places where tobacco can be purchased in the five boroughs. There are currently 8,992 licensed tobacco retail outlets citywide,³³ including 1,542 in the Bronx, 2,725 in Brooklyn, 2,196 in Manhattan, 2,117 in Queens and 412 on Staten Island.³⁴

To put that in perspective, the number of licensed tobacco retail outlets citywide is three times more than the total number of the top 10 corporate chain retail outlet stores combined (2,984³⁵), three and a half times more than the number of pizzerias (approximately 2,500)³⁶, three times more than the number of public, private, charter and parochial schools (approximately 2,619)³⁷ and 29 times more than the number of Starbucks (307³⁸) in New York City. **(Figure 5)**

The oversaturation of tobacco retail outlets in New York City makes it harder for New Yorkers to quit smoking, and encourages youth to start smoking.

Figure 5



**This total does not include the Duane Reade/Walgreens/Rite Aid stores selling tobacco since they are included in a separate column.*

THE OVERSATURATION OF TOBACCO RETAIL OUTLETS IN NEW YORK CITY

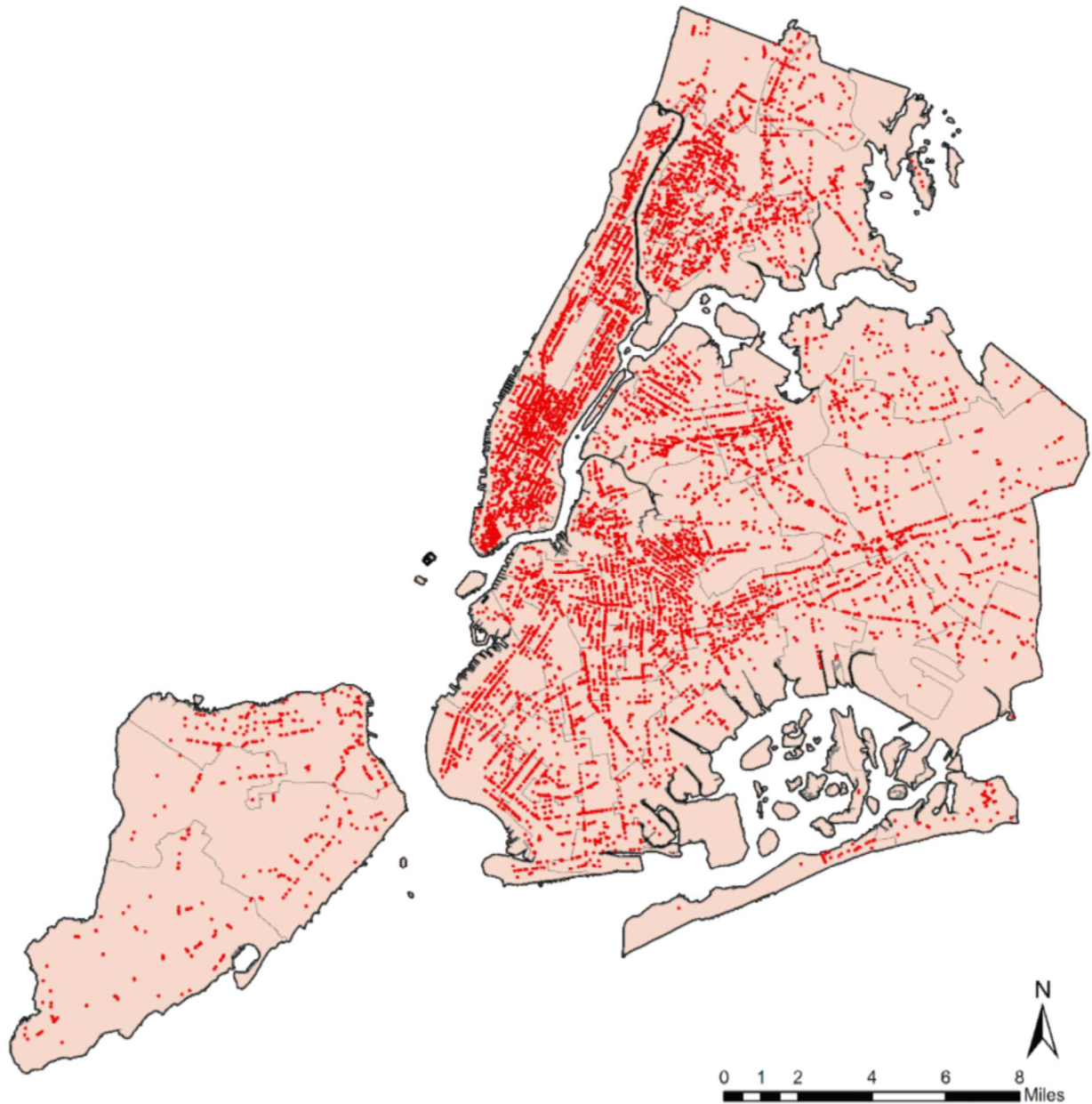
The maps

The following pages include maps showing every licensed tobacco retail store in New York City plotted based on their registered address. The numbers on the borough maps mark City Council districts. High resolution maps are available at www.acscan.org/oversaturated.

Included here are:

- New York City
- Manhattan
- Queens
- Bronx
- Brooklyn
- Staten Island

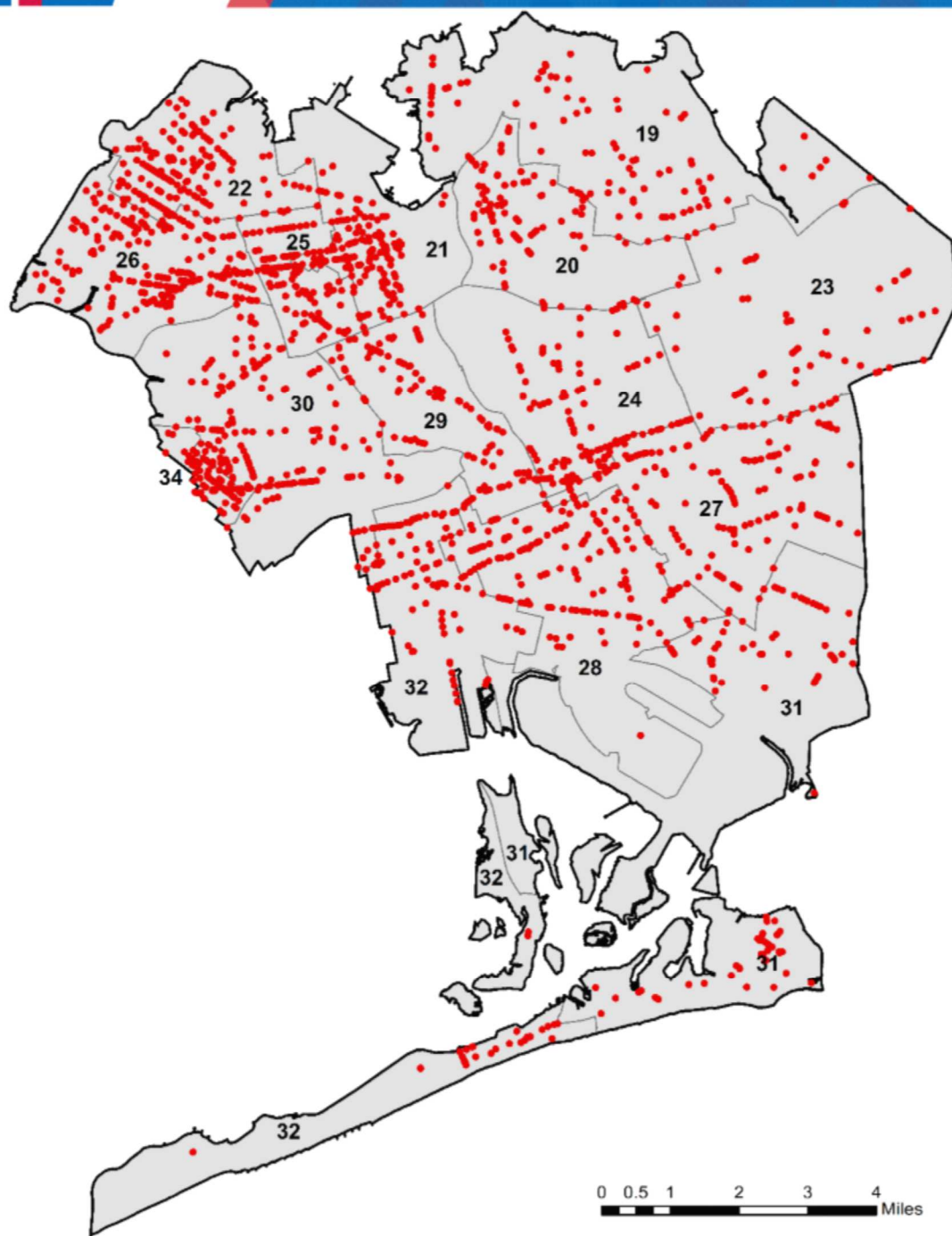
Tobacco Retail Locations in New York City



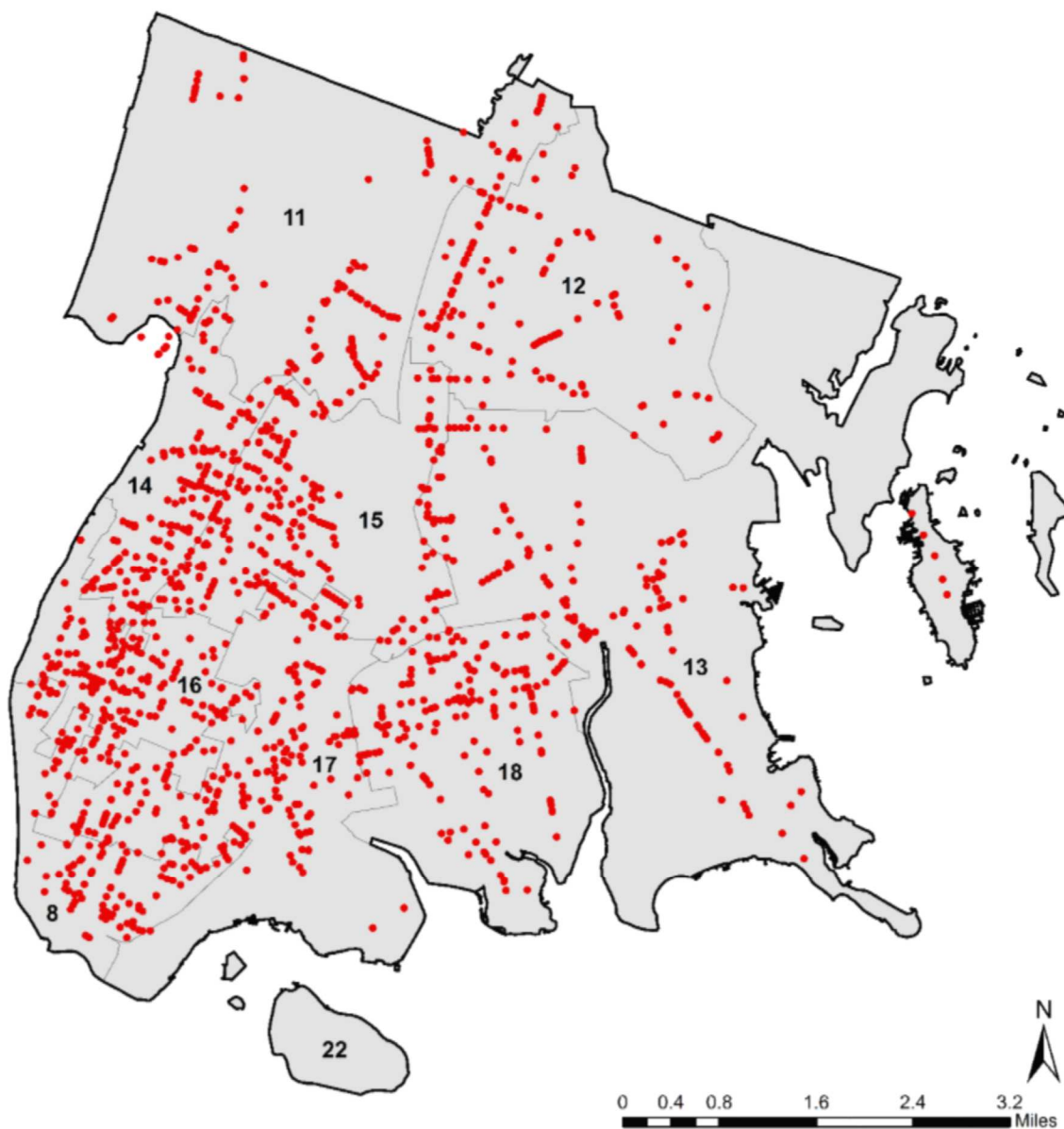
Tobacco Retail Locations in Manhattan



Tobacco Retail Locations in Queens



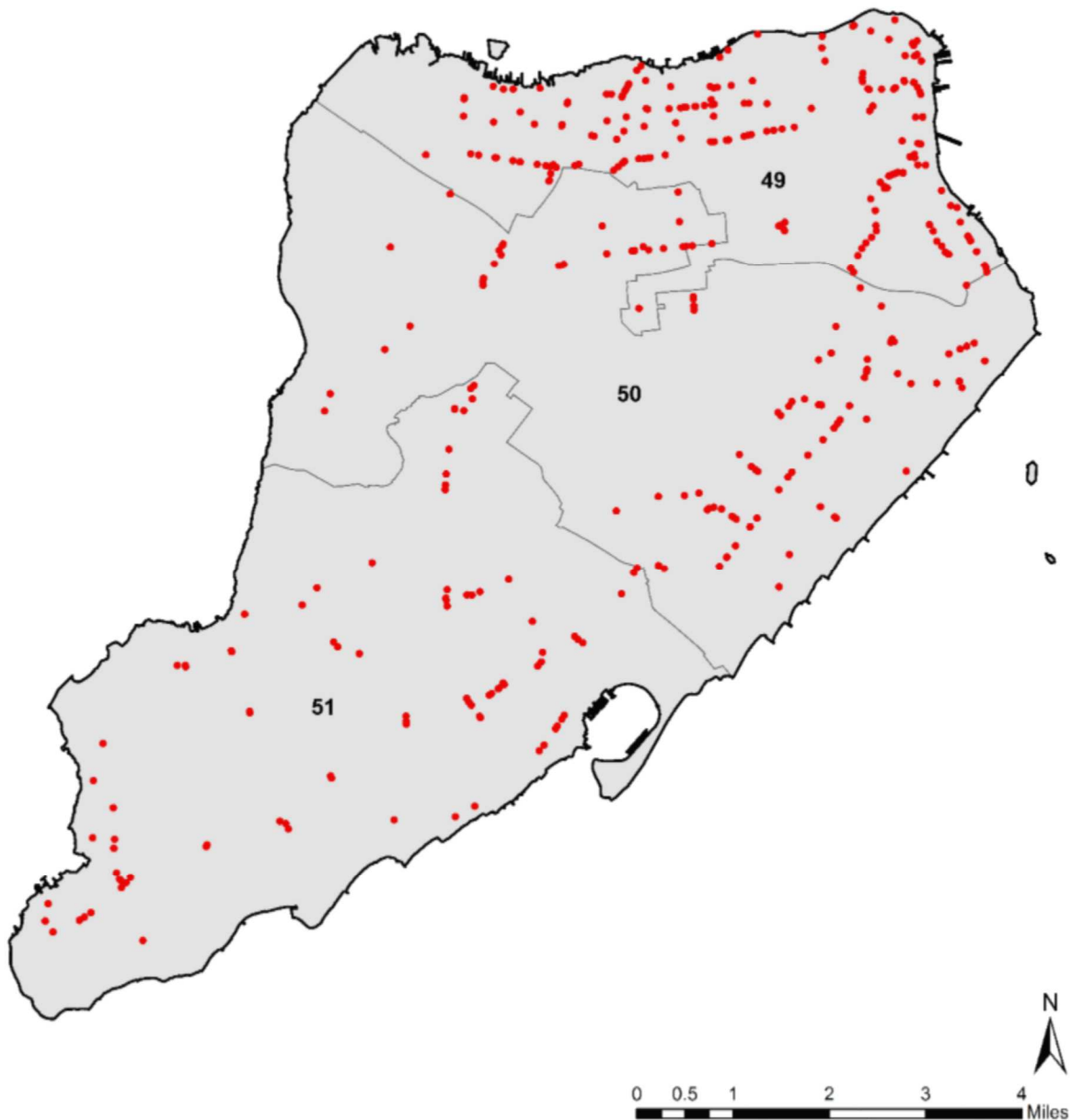
Tobacco Retail Locations in the Bronx



Tobacco Retail Locations in Brooklyn



Tobacco Retail Locations on Staten Island



TOBACCO RETAIL DENSITY

Across the five boroughs, licensed tobacco retail outlets can be found on nearly every corner and every block. Reducing the density of retail outlets will help reduce tobacco use by requiring customers to make a greater effort to find and obtain tobacco products.

In dense urban neighborhoods, tobacco retail outlets often feature signs that promote tobacco products and pricing, streets are littered with cigarette butts, and residents and visitors' ability to breath clean, smoke-free air is compromised. Retail outlets licensed to sell tobacco are rife with advertisements paid for by tobacco companies and provide easy access to purchase tobacco.

When examining tobacco retail density across New York City, trends become clear. Midtown and lower Manhattan, parts of the Bronx and a majority of Brooklyn are home to the highest density of tobacco retail outlets.

Borough Level

New York City is divided into five distinct boroughs. Each borough features unique characteristics that impact their retail climate.

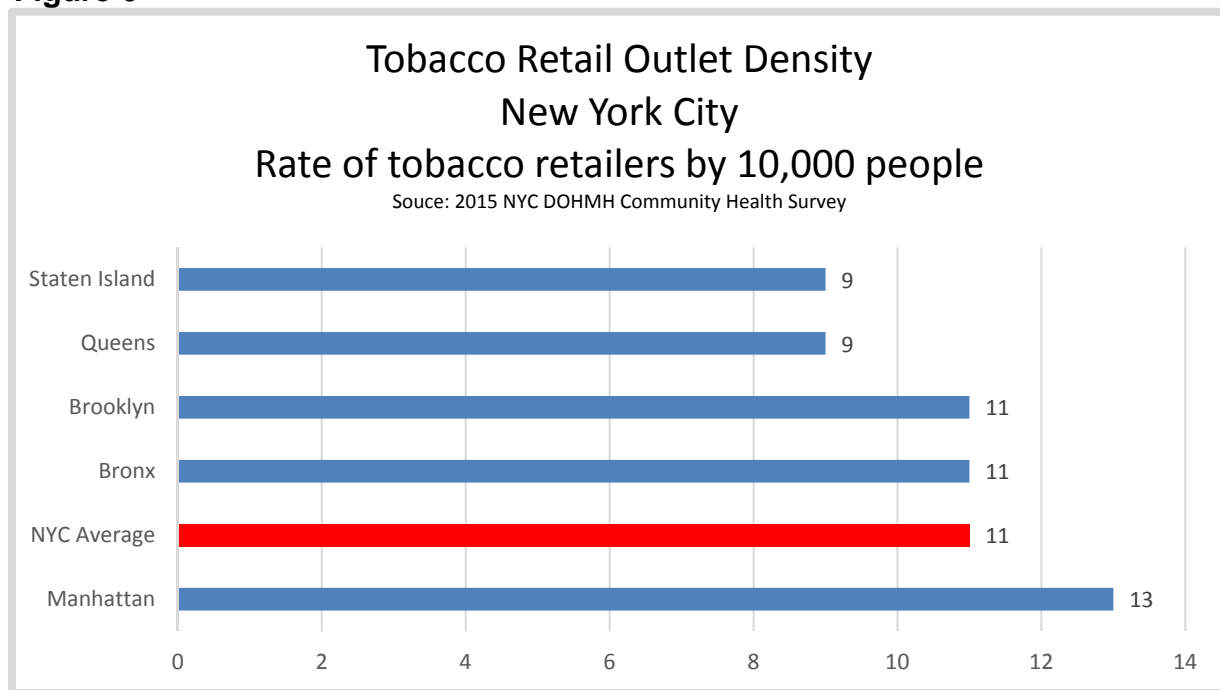
Staten Island and Queens have significantly lower population densities than other boroughs, with only 8,112 and 21,460 people respectively per square mile. By comparison, Manhattan has 72,033 people per square mile, followed by 37,137 people per square mile in Brooklyn and 34,653 people per square mile in the Bronx.³⁹

Manhattan leads the city in the rate of tobacco retail outlets with 13 per 10,000 people, with the Bronx (11 per 10,000 people), Brooklyn (11 per 10,000 people), Queens (9 per 10,000 people) and Staten Island (9 per 10,000 people) following. **(Figure 6)**⁴⁰

In addition to population density, transportation options play a significant role in how tobacco retail outlet density impacts smoking rates. Unlike the other four boroughs, but like many suburbs, Staten Island residents rely more on automobiles and less on public transit and walking to get around on a daily basis.⁴¹ Staten Island has more cars per capita than any other borough in New York City.⁴² As a result, tobacco retail outlet density may contribute less to smoking rates on Staten Island than in the other boroughs.

Areas with higher population density, more public transit options and higher walkability scores are more likely to be impacted by tobacco retail density.

Figure 6



High Risk Neighborhoods

The New York City Department of Health and Mental Hygiene has identified several neighborhoods in the south Bronx, East and Central Harlem, and North and Central Brooklyn as high health risk neighborhoods. High risk neighborhoods are neighborhoods in need of extra attention to promote health equity and reduce health disparities. With that designation comes targeted resources, programs, and attention to the health needs of those communities.⁴³

Community District Level

In both the South Bronx and in North and Central Brooklyn the rate of tobacco retail outlets found in the corresponding community districts is significantly higher than the borough as a whole. The five community districts with the highest rate of tobacco retail outlets in the Bronx are in the South Bronx, and the seven community districts with the highest rate of tobacco retail outlets in Brooklyn are in North and Central Brooklyn. Smoking rates in each of these neighborhoods rank at the top in the city.

There are currently 59 community districts in New York City, including 12 in Manhattan, 12 in the Bronx, 18 in Brooklyn, 14 in Queens and 3 on Staten Island.

Midtown Manhattan (62 per 10,000 people) and the Financial District (25 per 10,000 people) have a disproportionate rate of retail outlets compared to the number of residents. Hunts Point and Longwood (17 per 10,000 people), Greenwich Village and Soho (17 per 10,000 people) and Clinton and Chelsea (17 per 10,000 people) lead the city in more residential neighborhoods. **(Figures 7-11)⁴⁴**

Figure 7

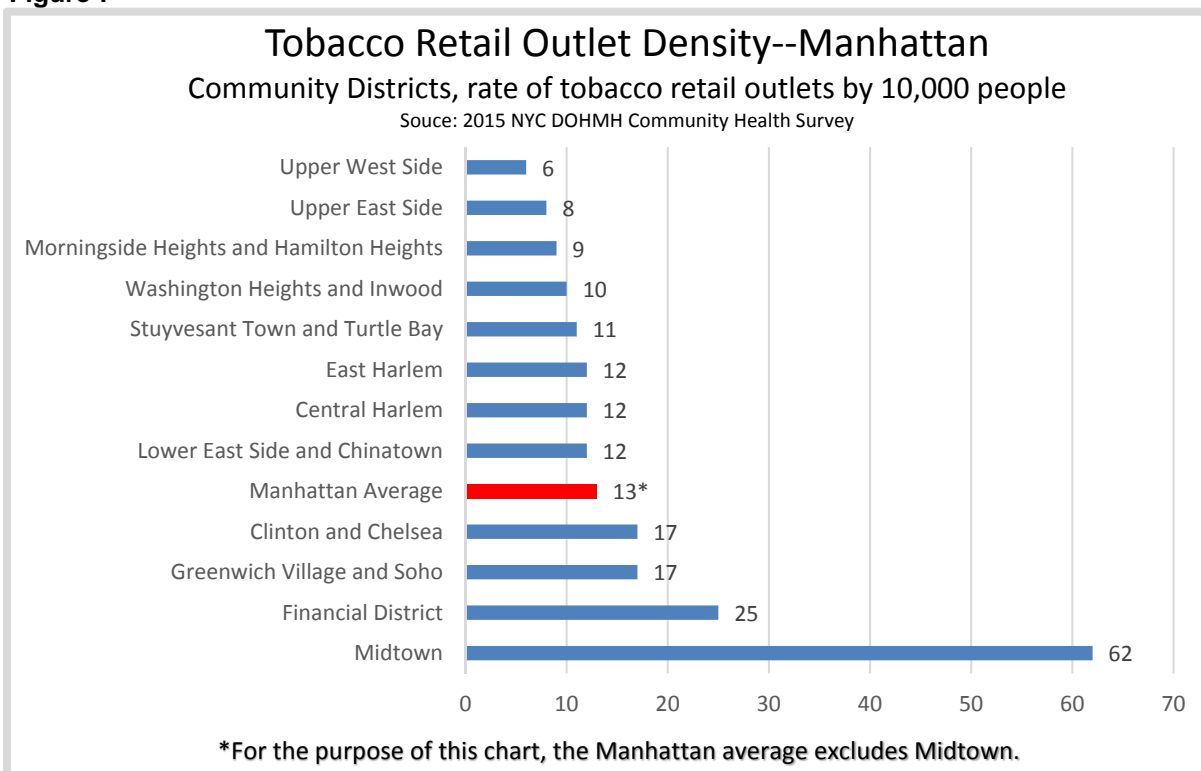


Figure 8

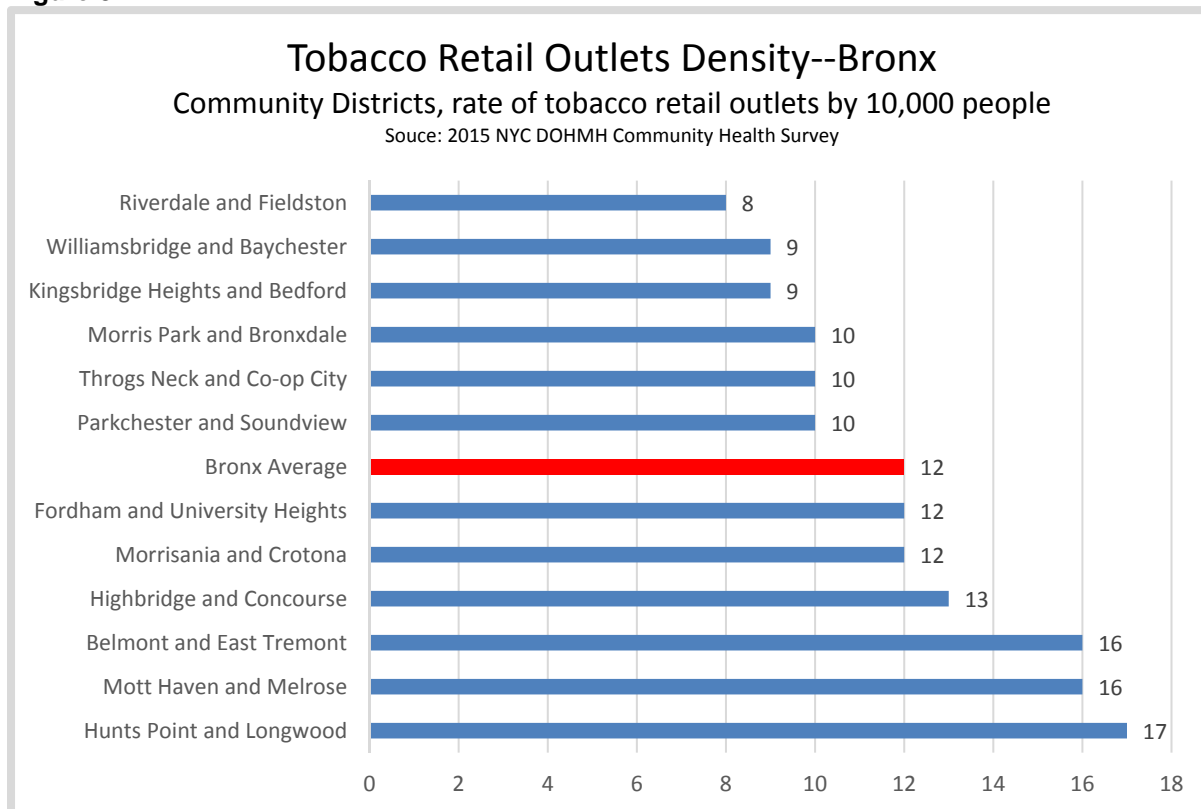


Figure 9

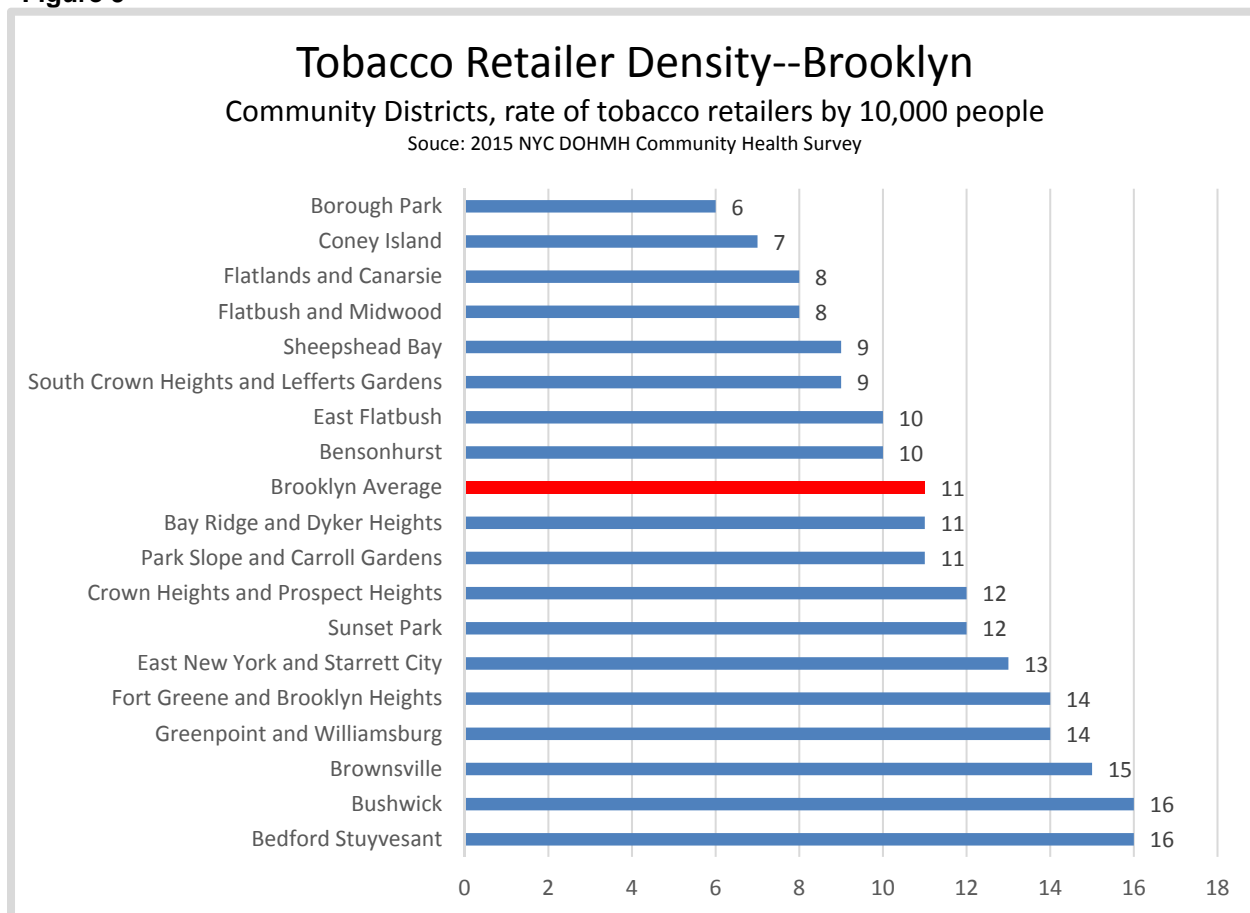


Figure 10

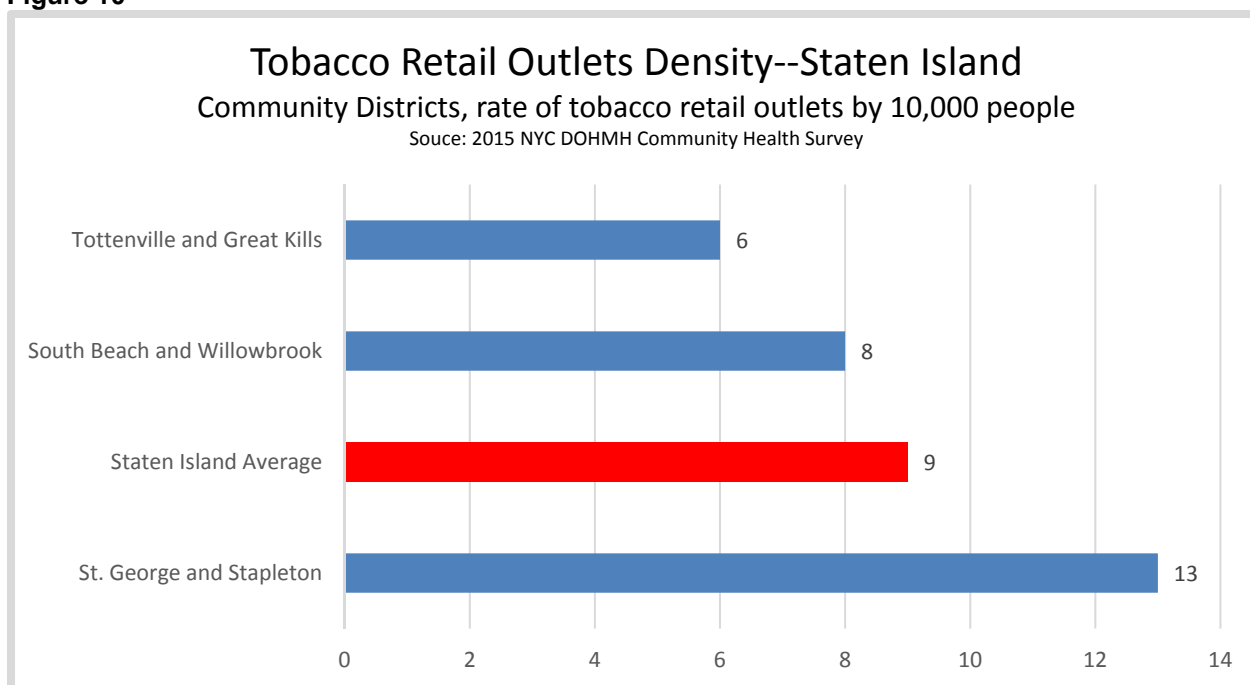
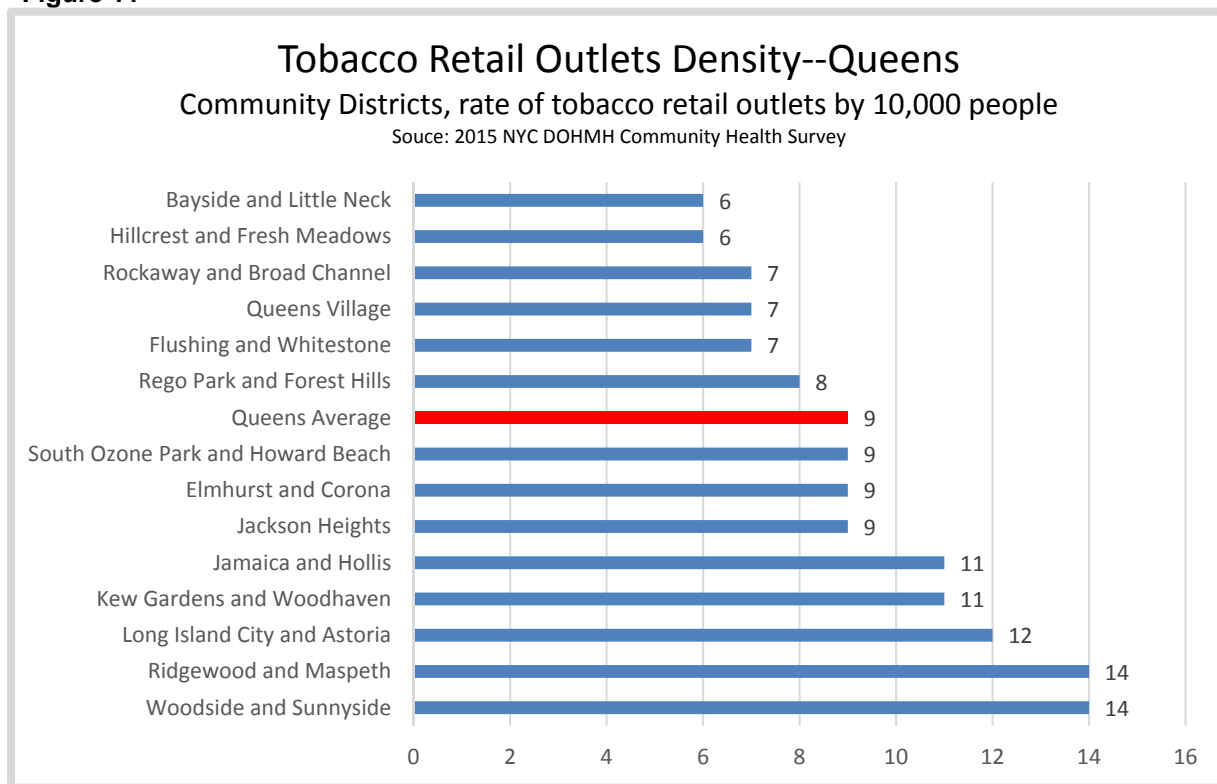


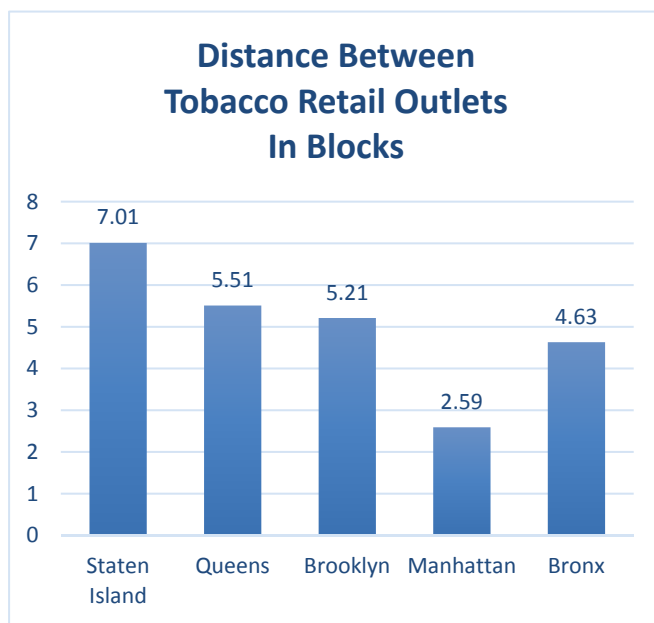
Figure 11



PROXIMITY TO OTHER TOBACCO RETAIL OUTLETS

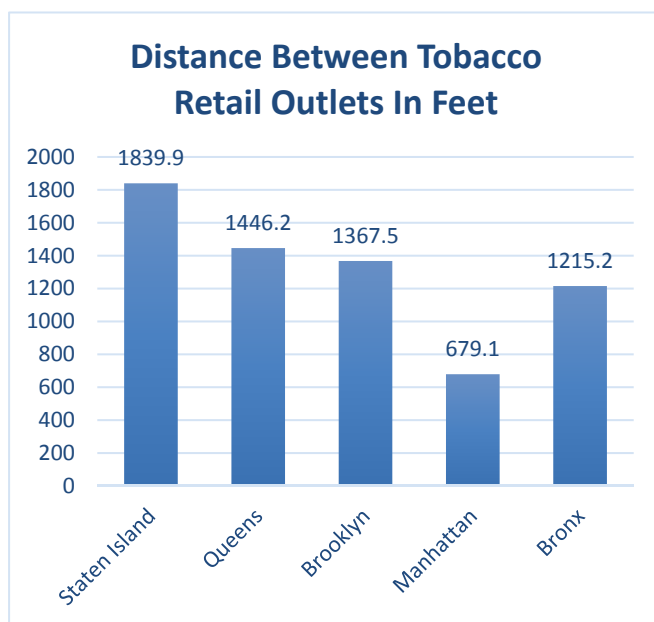
Citywide, there is a licensed tobacco retail outlet every **five blocks or 1,312 feet**. (Figure 12 & 13)⁴⁵ When accounting for city parks, beaches, cemeteries and other open spaces where no retail outlet stores exist, the distance between licensed tobacco retail outlets is even less.

Figure 12



Analysis by: Aleksey Bilogur, CUNY Baruch⁴⁶

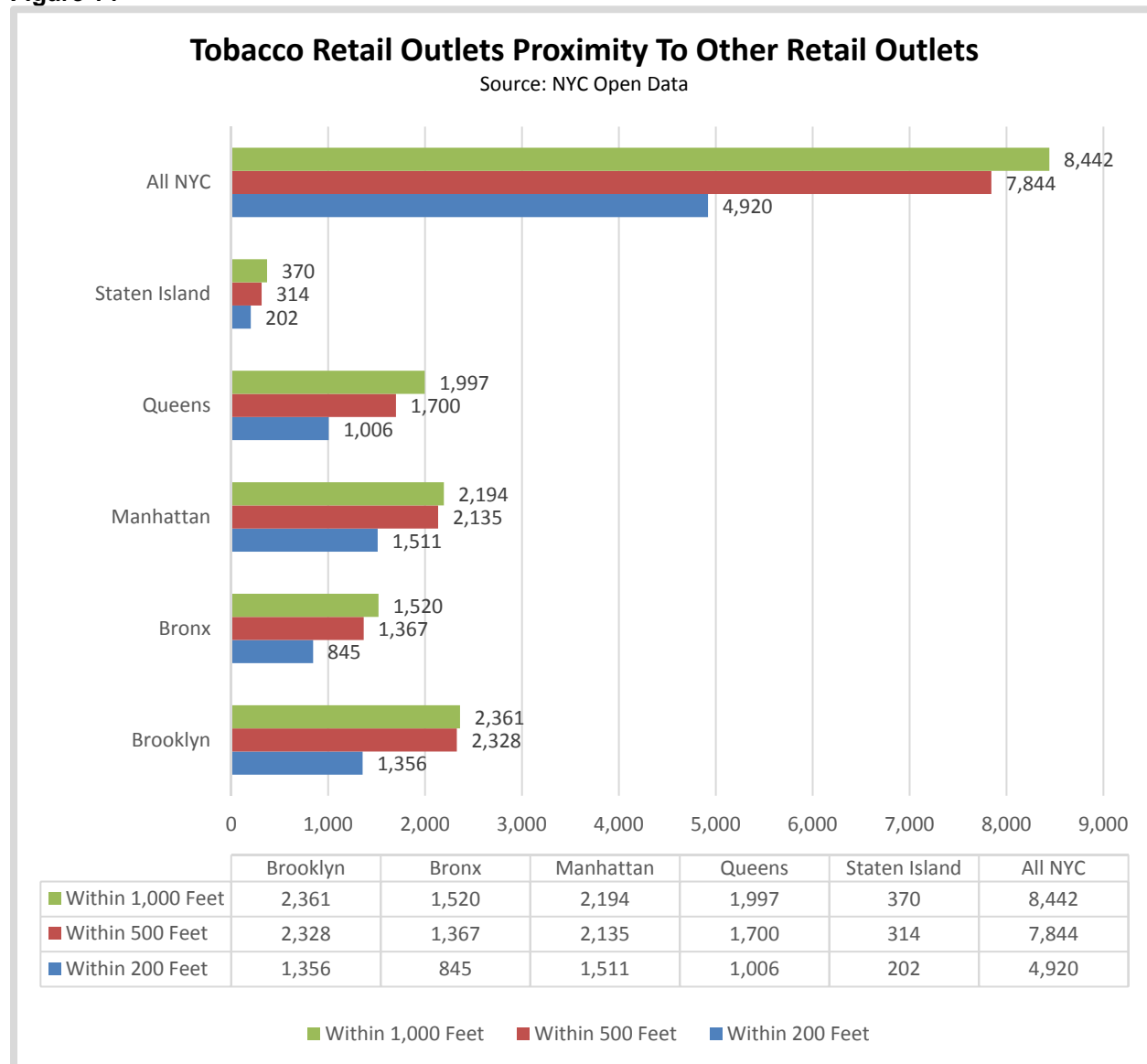
Figure 13



Analysis by: Aleksey Bilogur, CUNY Baruch⁴⁷

There are 4,920 licensed tobacco retail outlets within 200 feet of another retail outlet, 7,844 licensed tobacco retail outlets within 500 feet of another retail outlet and 8,442 licensed tobacco retail outlets within 1,000 feet of another retail outlet. Citywide, only 221 licensed tobacco retail outlets are more than 1,000 feet apart.⁴⁸ The maximum distance between licensed tobacco retail outlets citywide is 9,730 feet (1.84 miles) in the Far Rockaways (Breezy Point). **(Figure 14)**⁴⁹

Figure 14



Alcohol Versus Tobacco Retail Outlet Density Restrictions: A Comparison

The New York State Alcoholic Beverage Control Law⁵⁰ prohibits certain licenses from being issued if the location of the establishment is within a 500 foot radius of certain other establishments with on-premises liquor licenses. The restrictions apply in cities, towns or villages with a population of 20,000 or more. No similar restriction exists in relation to tobacco and youth despite the significant negative impact that tobacco has on health.

PROXIMITY TO OTHER TOBACCO RETAIL OUTLETS

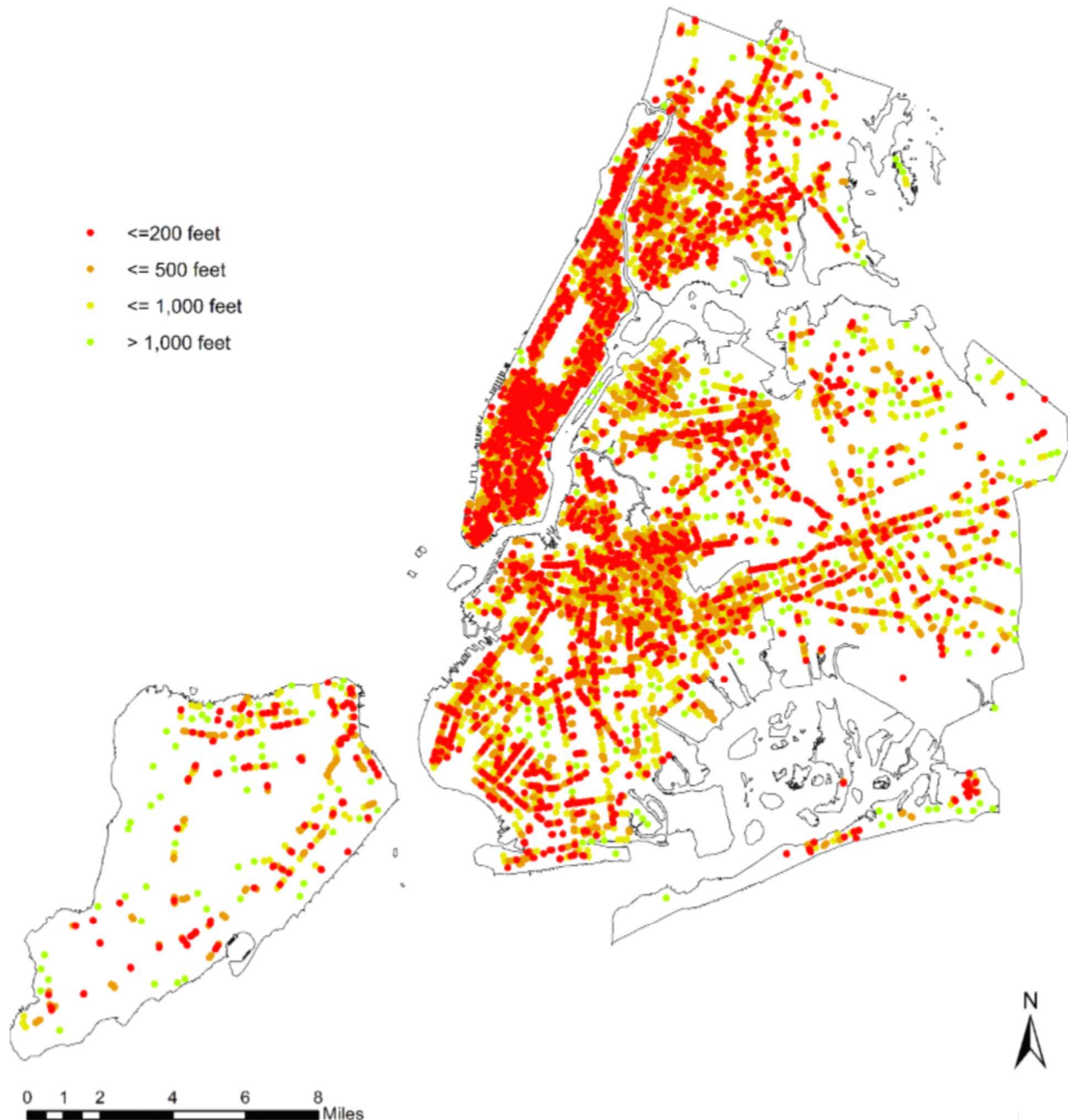
The maps

The following pages include maps showing every licensed tobacco retail dealer in New York City plotted based on their registered address along with their proximity to other licensed tobacco retail outlets. High resolution maps are available at www.acscan.org/oversaturated.

Included here are:

- New York City
- Manhattan
- Queens
- Bronx
- Brooklyn
- Staten Island

Distances Between Tobacco Retail Locations



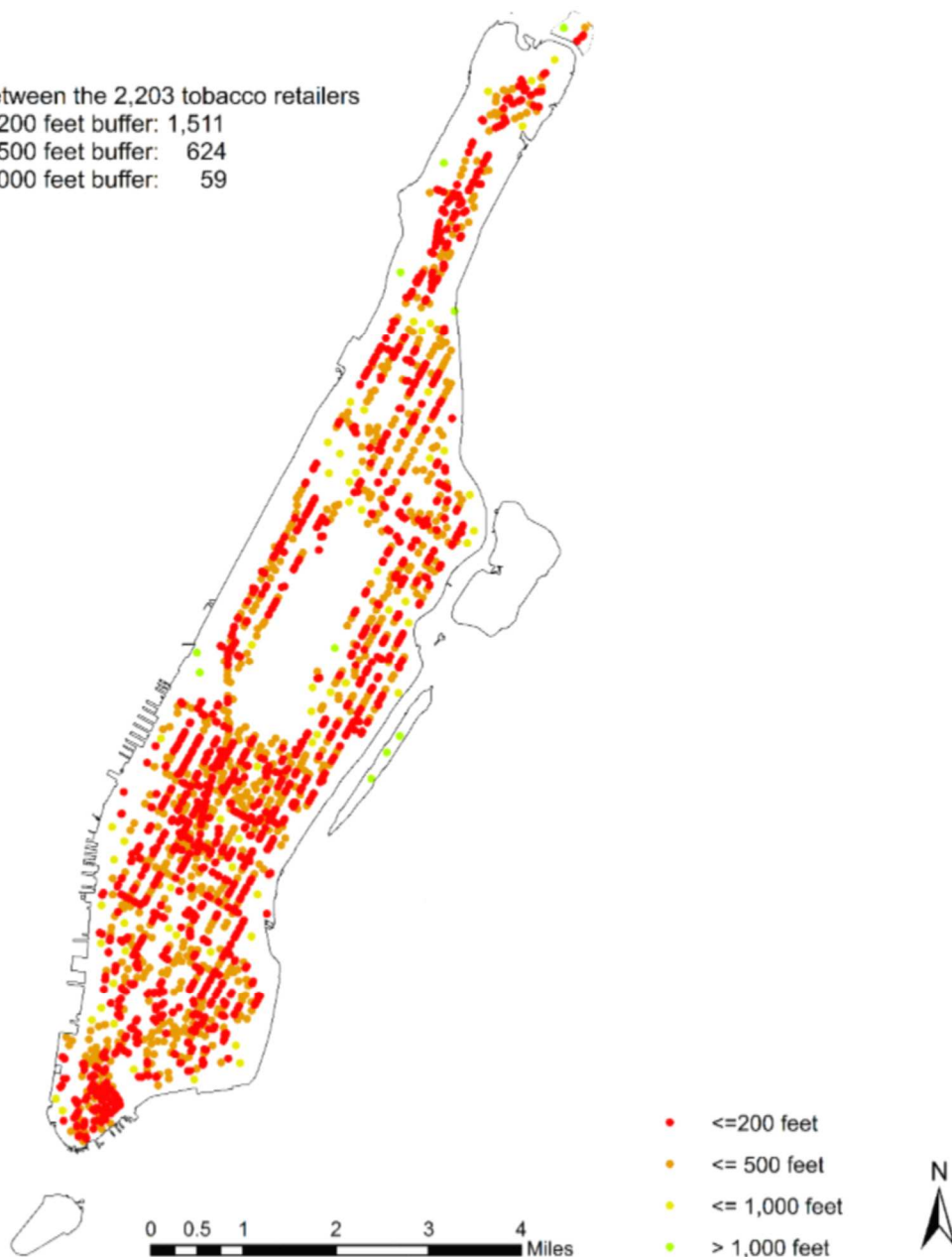
Distances Between Tobacco Retail Locations in Manhattan

Distance between the 2,203 tobacco retailers

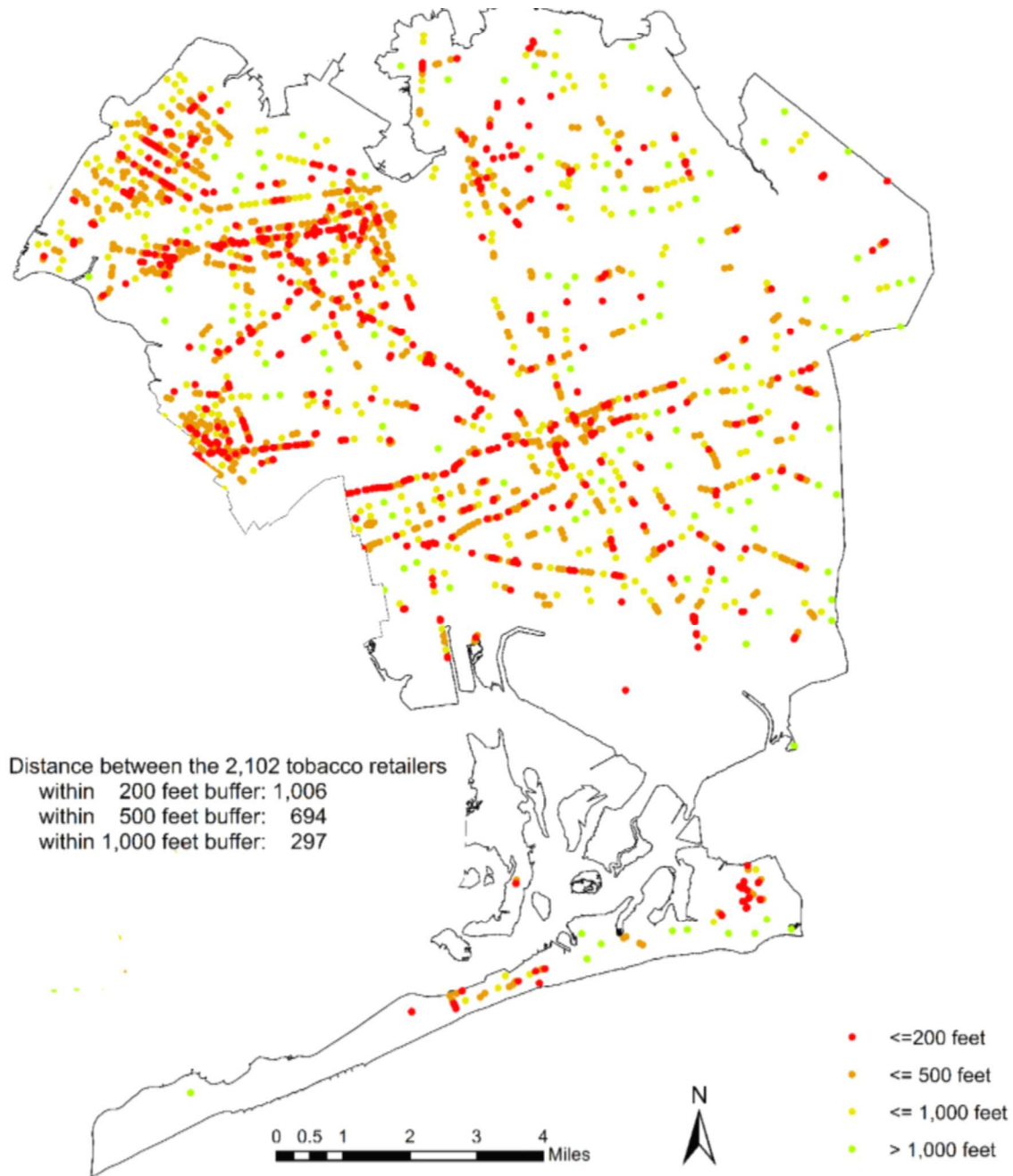
within 200 feet buffer: 1,511

within 500 feet buffer: 624

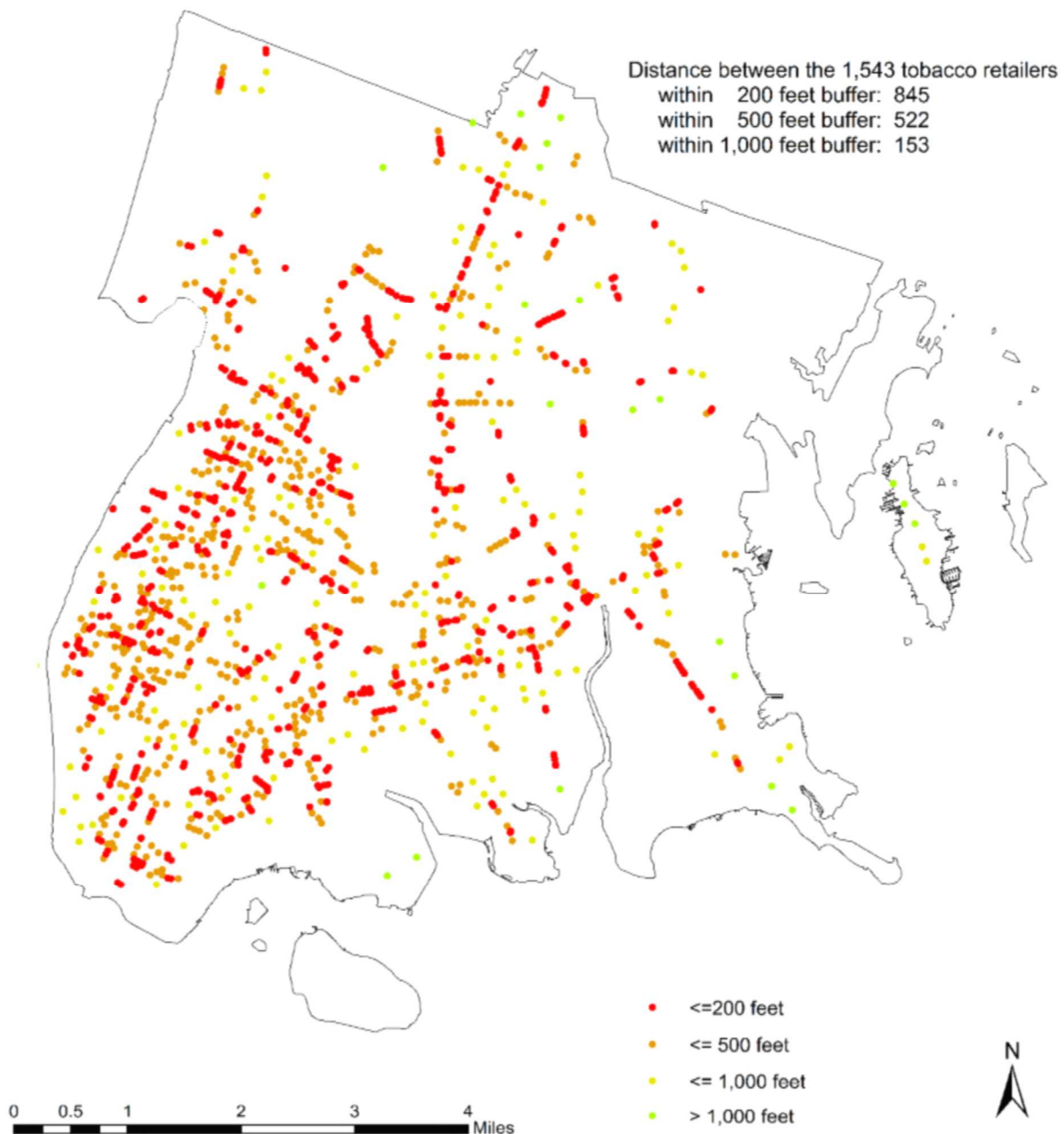
within 1,000 feet buffer: 59



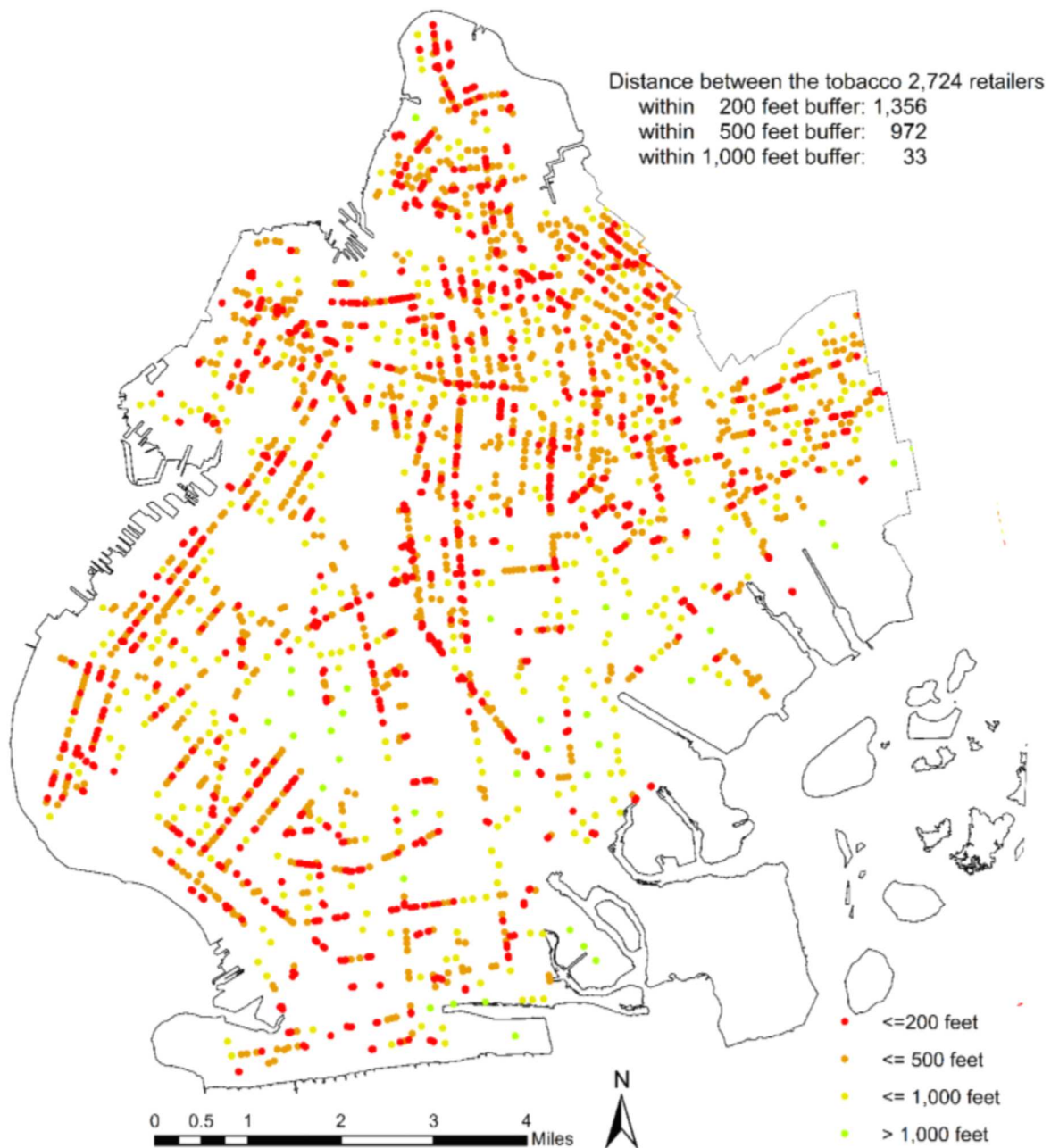
Distances Between Tobacco Retail Locations in Queens



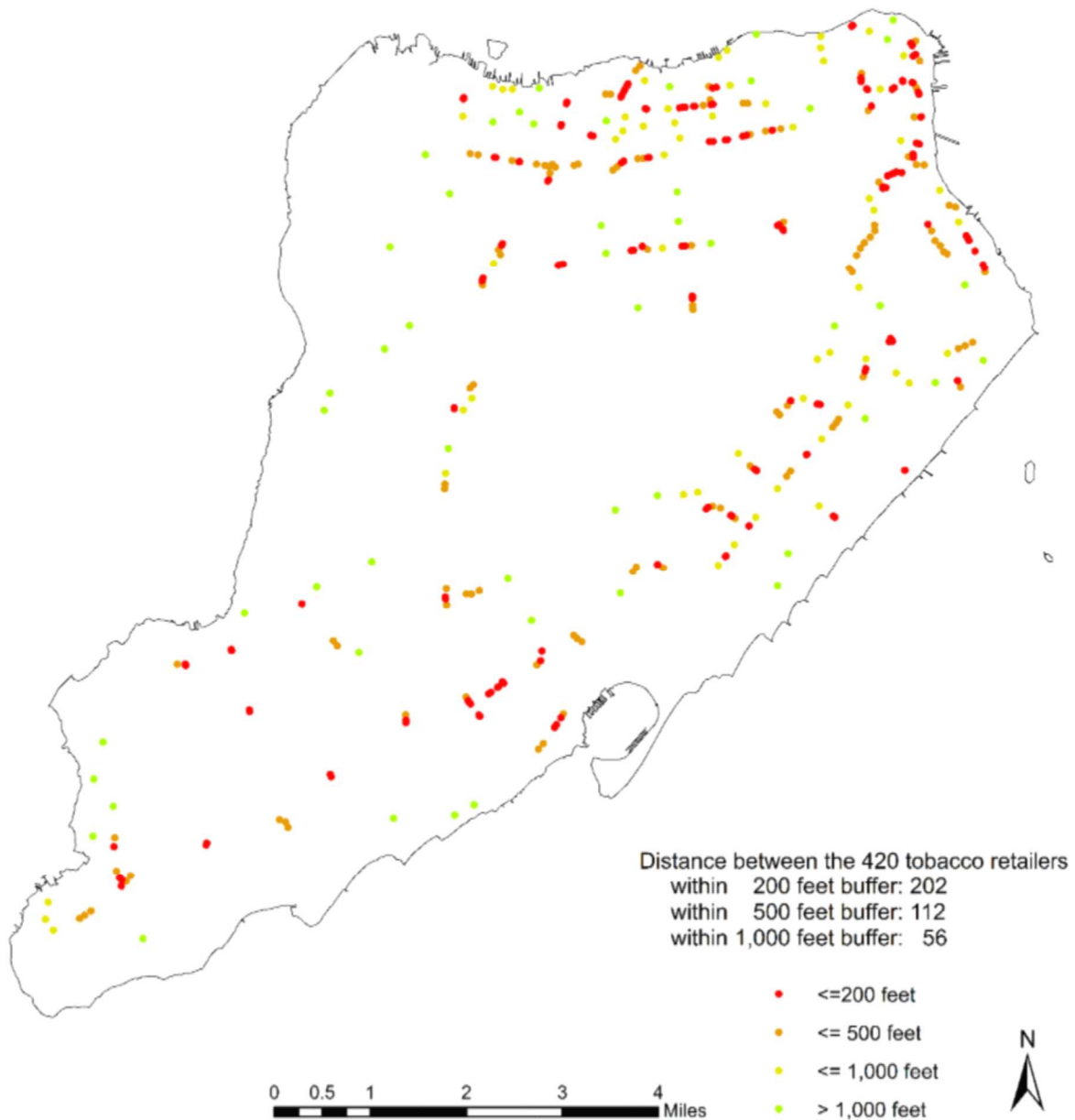
Distances Between Tobacco Retail Locations in the Bronx



Distances Between Tobacco Retail Locations in Brooklyn



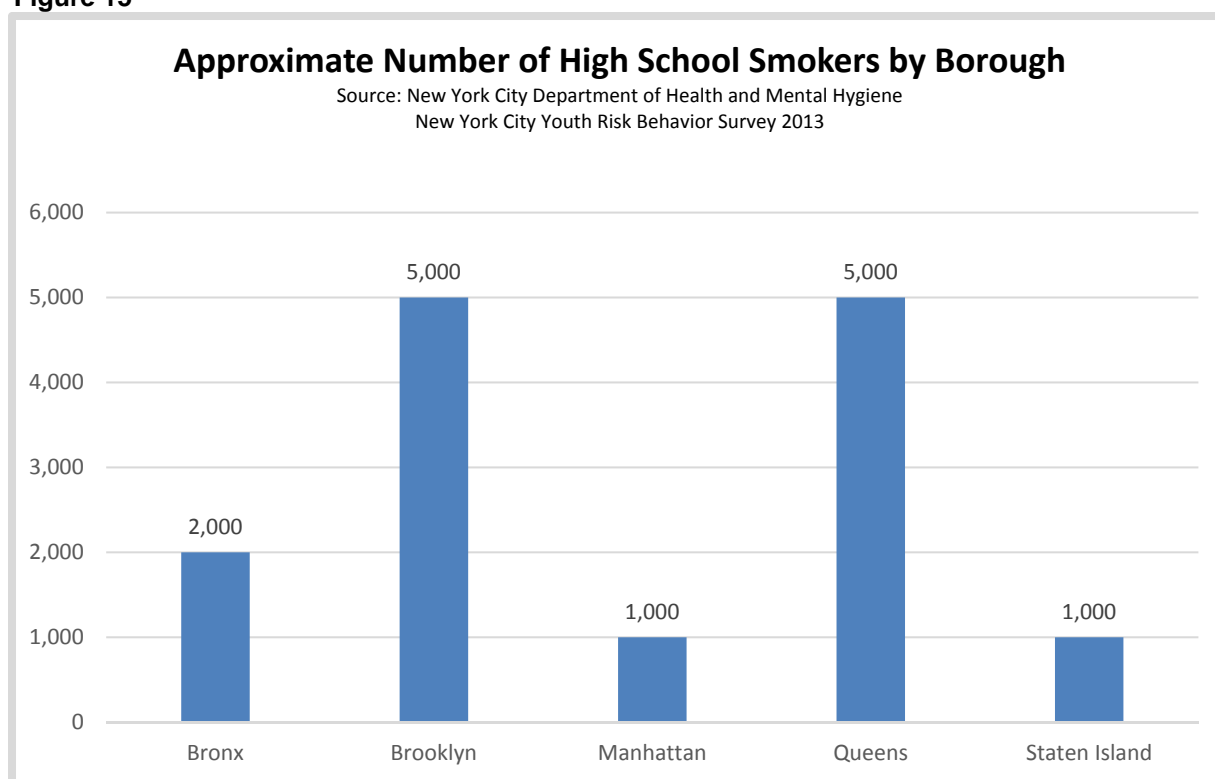
Distances Between Tobacco Retail Locations on Staten Island



TOBACCO RETAIL OUTLETS AND SCHOOLS

According to Tobacco Free New York State, each year in New York state, 22,500 youth become regular daily smokers, and 31.6 million packs of cigarettes are bought or smoked by youth under the age of 18.⁵¹ Approximately 15,000 public high school students smoke cigarettes (**Figure 15**)⁵², one-third of whom will die prematurely as a direct result of smoking.⁵³ Every day, the tobacco industry spends over \$500,000 in New York state to market its deadly products.⁵⁴ Tobacco companies place most of their advertising where young people shop – in convenience stores, where 75 percent of New York State teens shop at least once per week.⁵⁵ The more tobacco retail outlets there are near schools, the more likely children are to smoke.⁵⁶ More than one in three New York City high school students who smoke obtain their cigarettes from a neighborhood retail outlet.⁵⁷

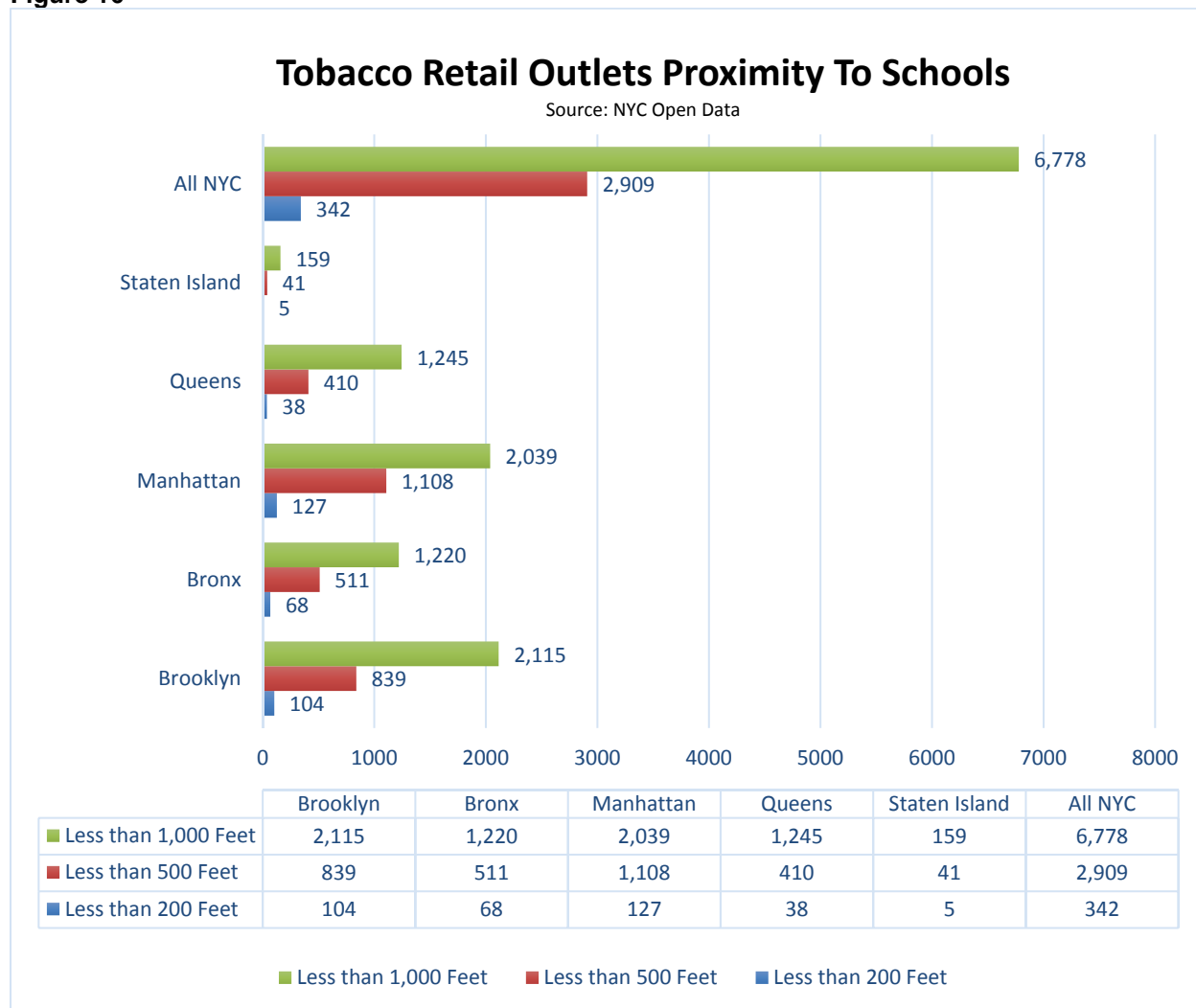
Figure 15



Youth in New York City are more likely to find tobacco retail outlets than libraries⁵⁸ or playgrounds⁵⁹ in their neighborhoods. There is approximately one licensed tobacco retail outlet for every 196 children⁶⁰ in New York City. Meanwhile, there is approximately one playground for every 1,765 children⁶¹ and one public library for every 8,613⁶² children in New York City.

In New York City there are 342 licensed tobacco retail outlets within 200 feet of a school, 2,909 licensed tobacco retail outlets within 500 feet of a school and 6,778 licensed tobacco retail outlets within 1,000 feet of a school. **(Figure 16)**⁶³

Figure 16



Alcohol Versus Tobacco and Youth Retail Outlet Restrictions: A Comparison

The New York State Alcoholic Beverage Control Law⁶⁴ prohibits certain licenses from being issued if the location of the establishment is on the same street and within 200 feet of a building that is used exclusively as a school, church, synagogue or other place of worship. This restriction applies to any retail establishment where liquor will be sold for on-premises consumption and any retail establishment where liquor or wine will be sold for consumption off the premises. No similar restriction exists in relation to tobacco and youth despite the significant negative impact that tobacco has on health.

TOBACCO RETAIL LOCATIONS AND SCHOOLS

The maps

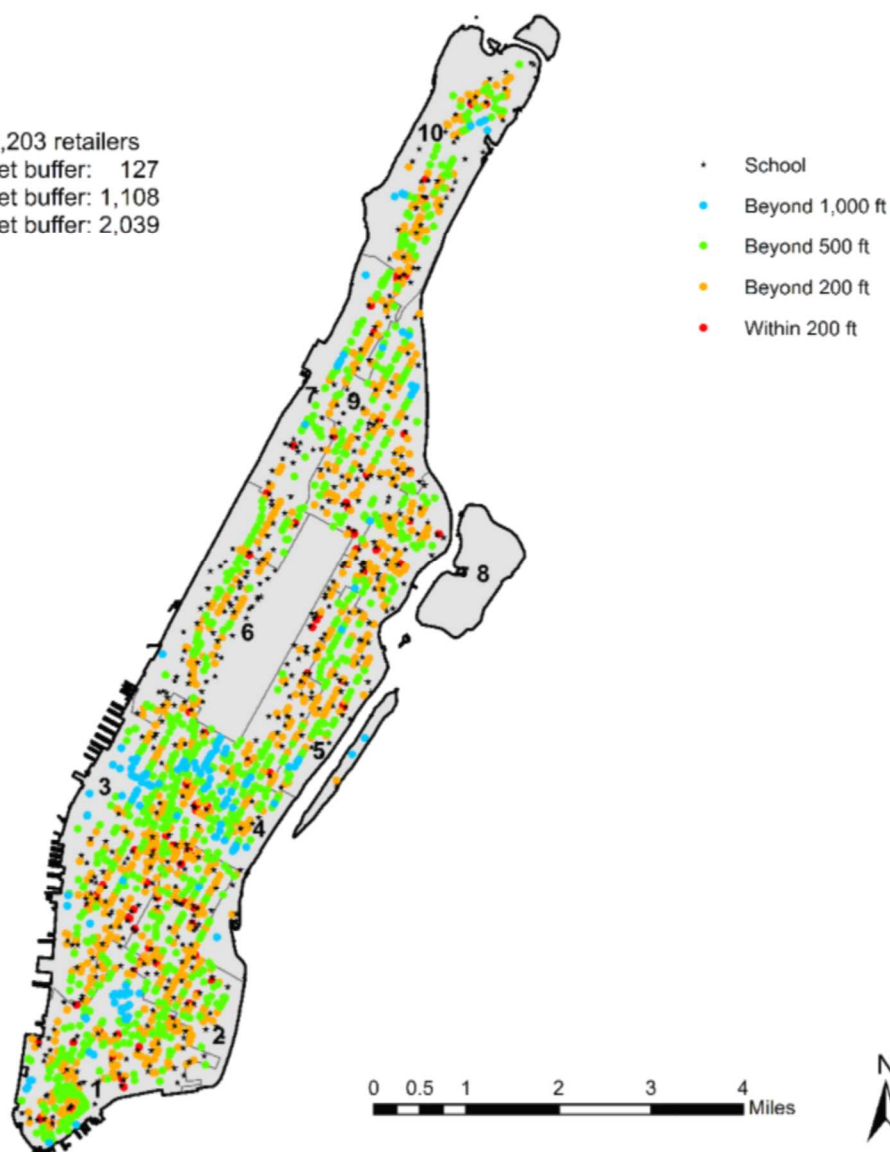
The following pages include maps showing every licensed tobacco retail dealer in New York City and every New York City public school plotted based on their registered address. The numbers on the borough maps are of City Council districts. High resolution maps are available at www.acscan.org/oversaturated.

Included here are:

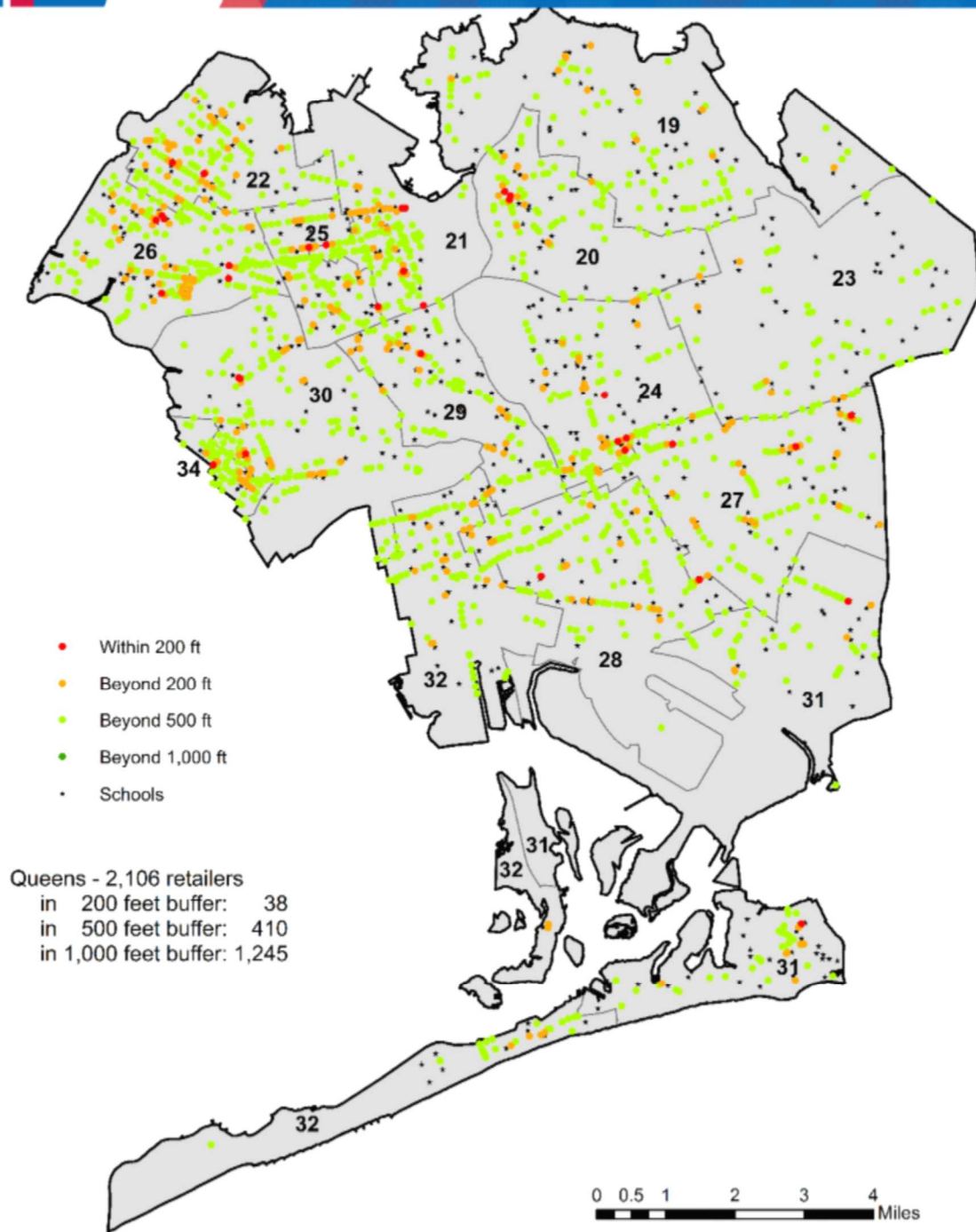
- Manhattan
- Queens
- Bronx
- Brooklyn
- Staten Island

Manhattan Tobacco Retail Locations in Relationship to Distance to Schools

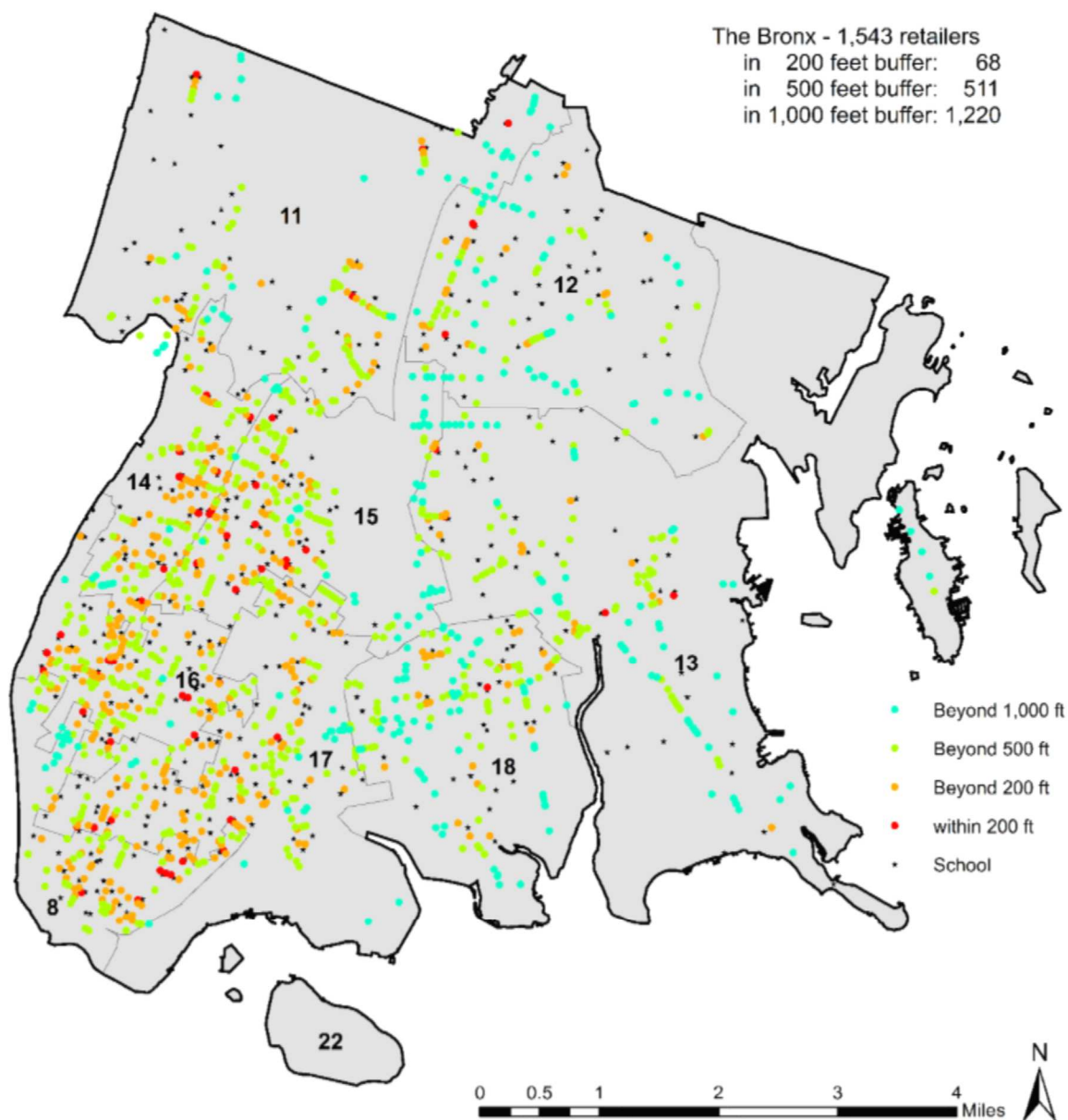
Manhattan - 2,203 retailers
in 200 feet buffer: 127
in 500 feet buffer: 1,108
in 1,000 feet buffer: 2,039



Queens Tobacco Retail Locations in Relationship to Distance to Schools

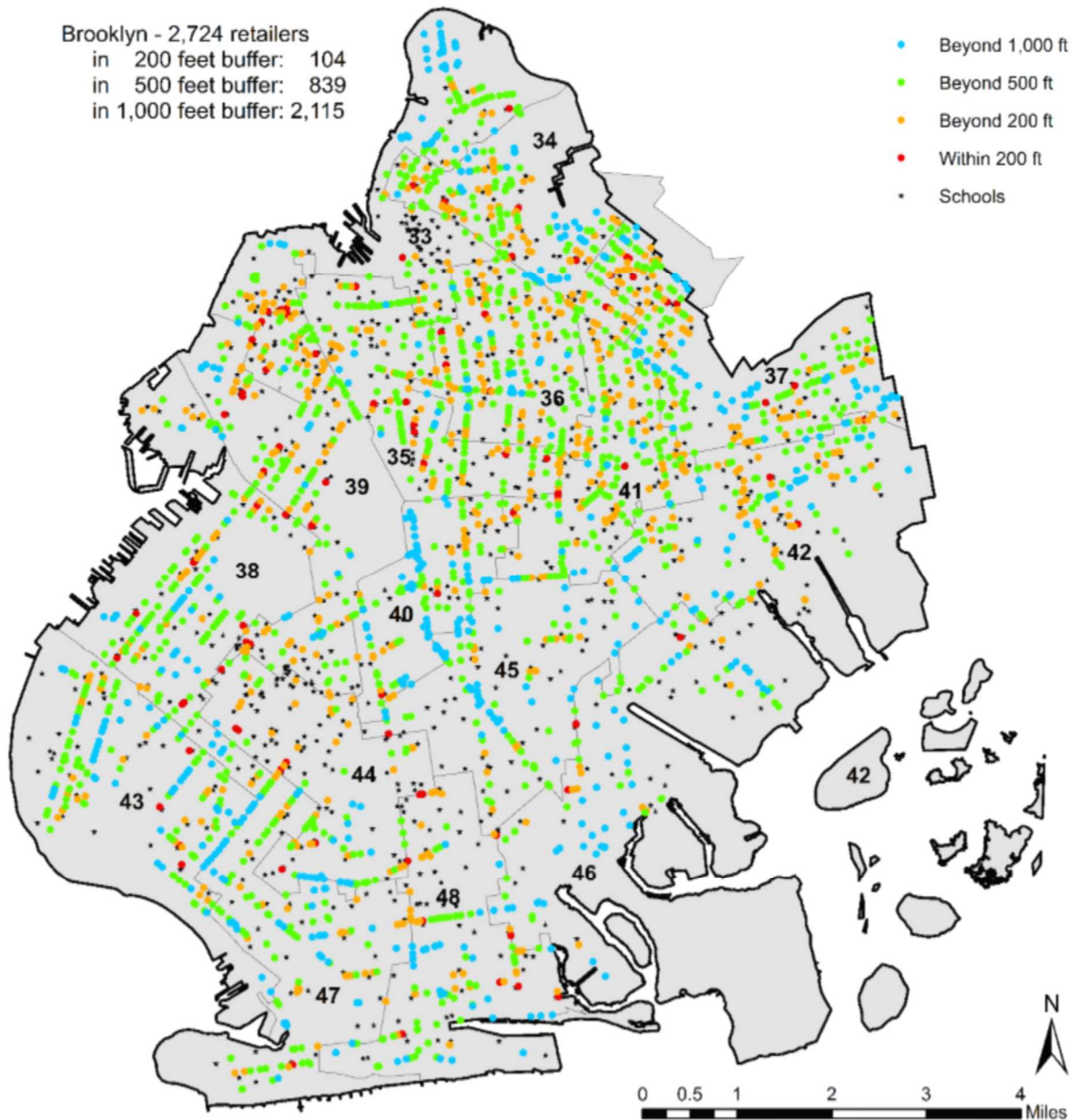


Bronx Tobacco Retail Locations in Relationship to Distance to Schools

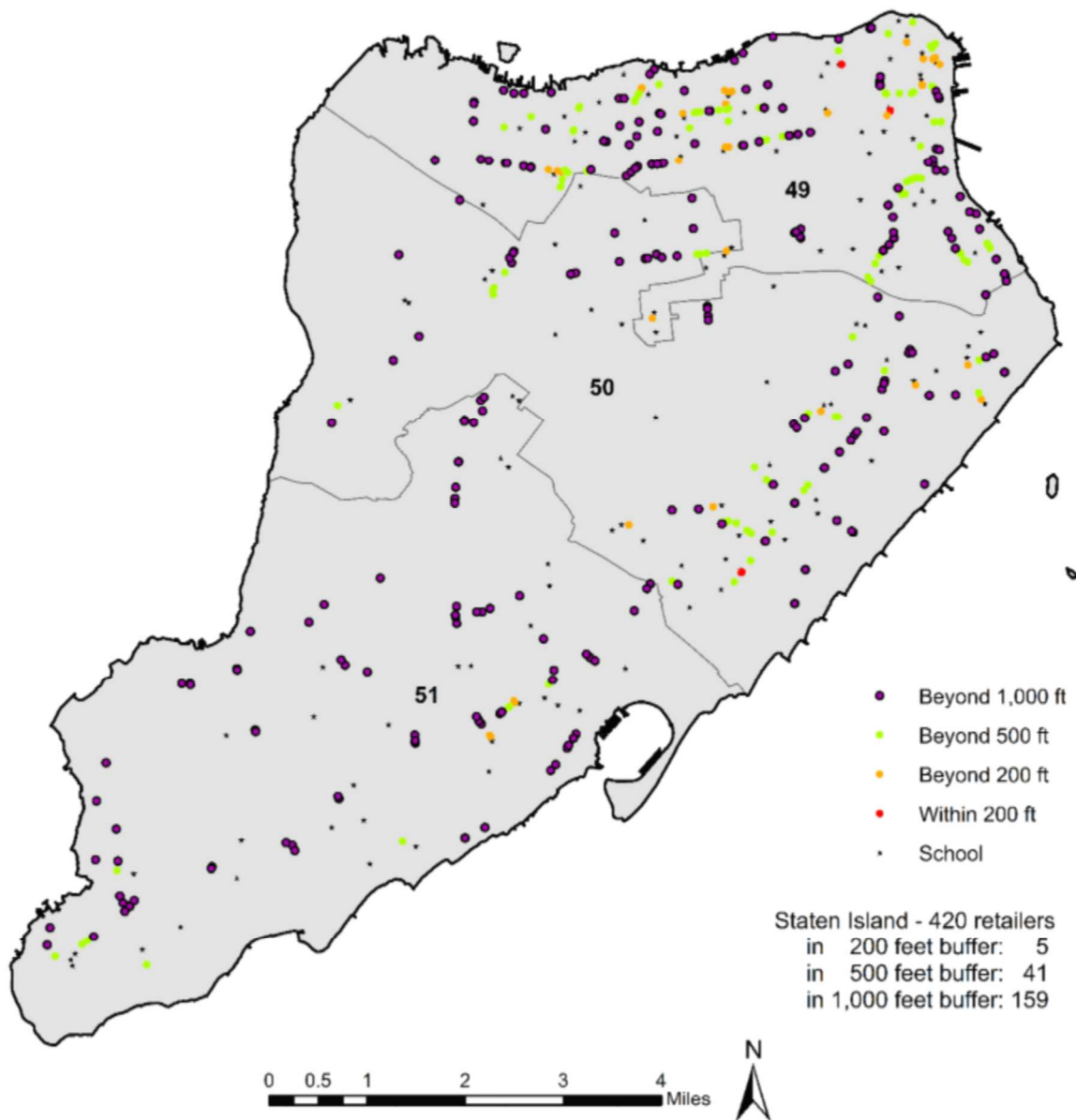


Brooklyn Tobacco Retail Locations in Relationship to Distance to Schools

Brooklyn - 2,724 retailers
in 200 feet buffer: 104
in 500 feet buffer: 839
in 1,000 feet buffer: 2,115



Staten Island Tobacco Retail Locations in Relationship to Distance to Schools

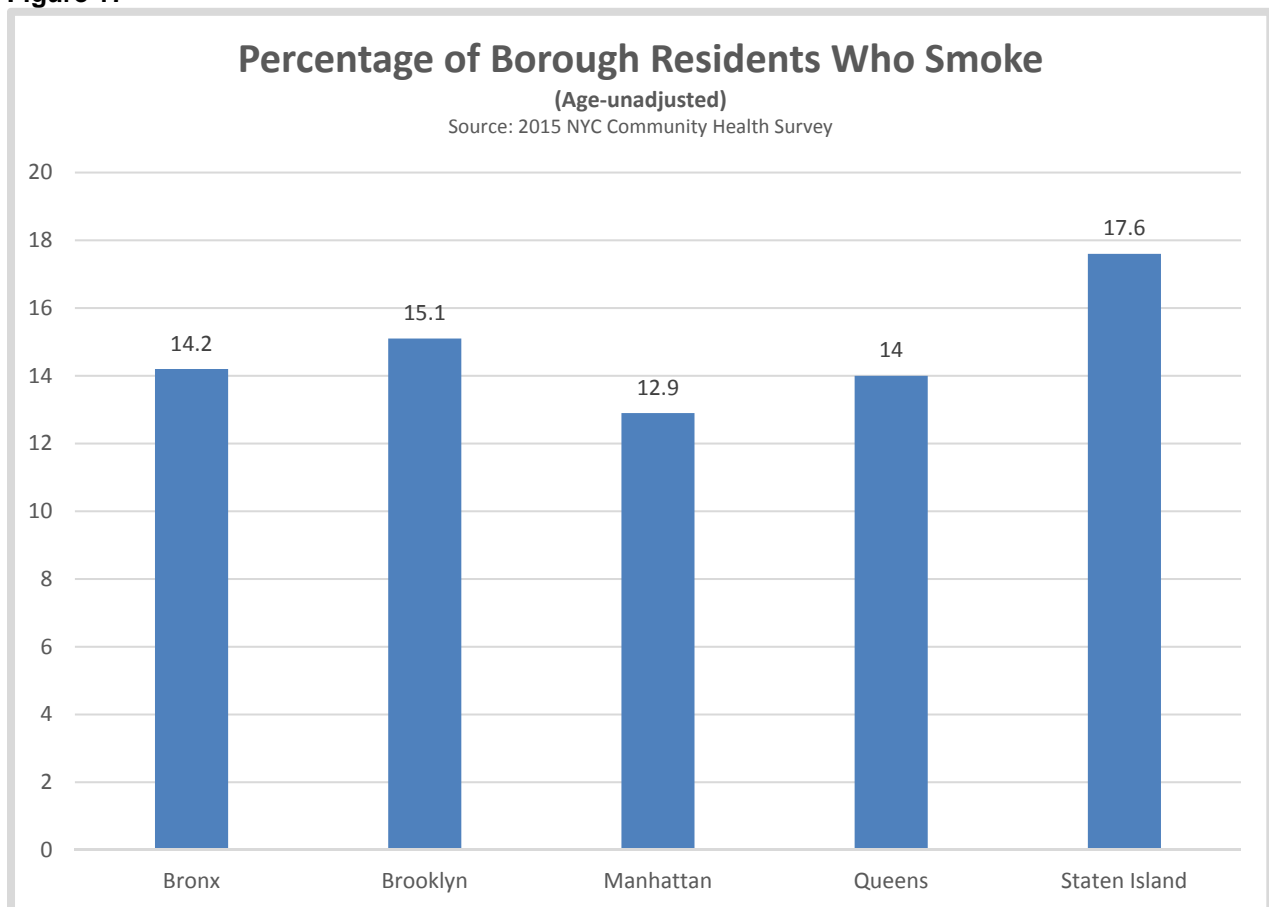


TOBACCO USE IN NEW YORK CITY

Since 2002 smoking rates in New York City have declined by 33 percent, dropping from a three-year average of 21.6 percent between 2000-2002 to a three-year average of 14.7 percent between 2013-2015.⁶⁵ Currently the smoking rate stands at 14.3 percent.⁶⁶ Approximately 950,000 adults⁶⁷ smoke cigarettes.⁶⁸ In addition, more than 200,000 children are exposed to secondhand smoke at home.⁶⁹

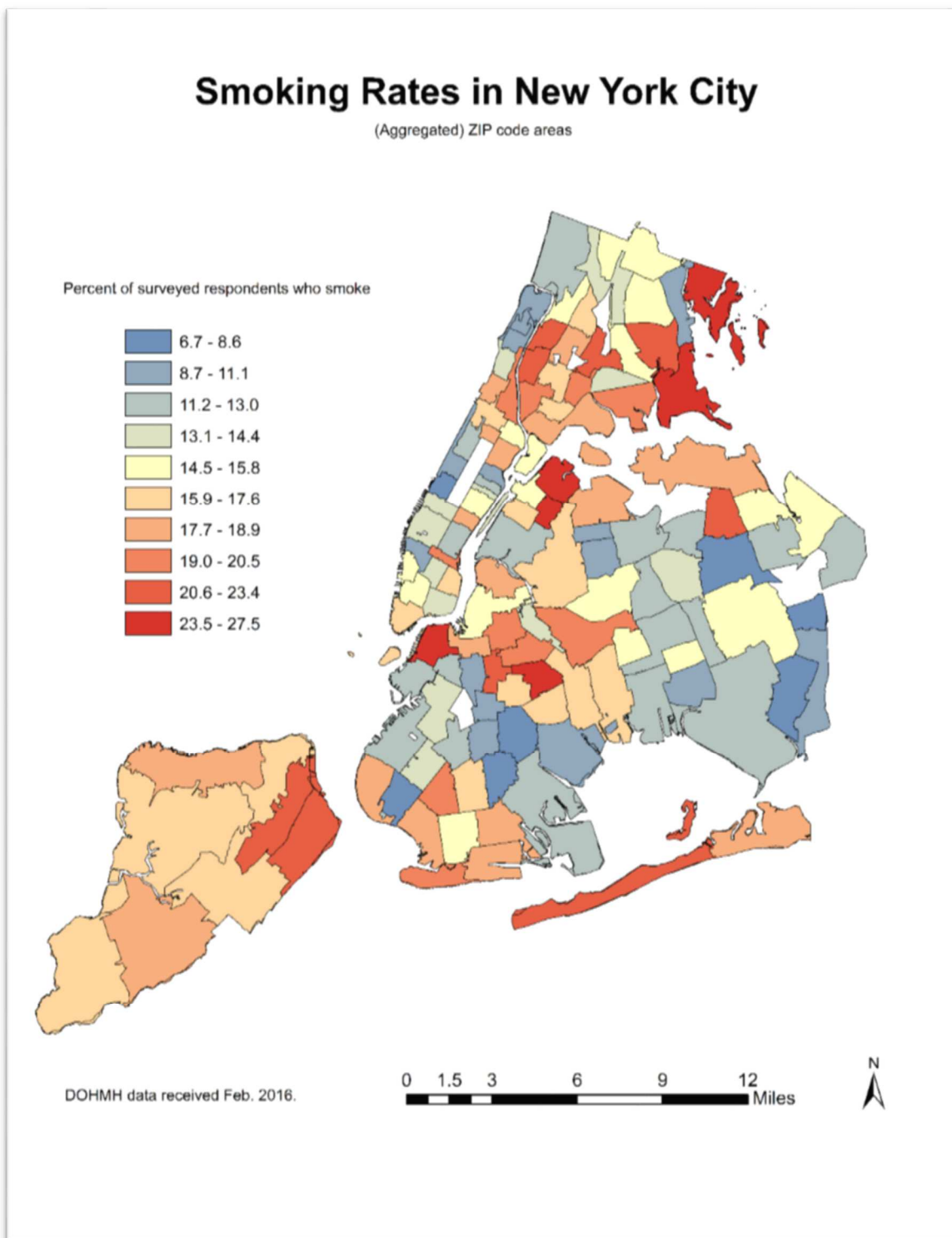
When looking at the five boroughs individually the differences in smoking rates may not seem substantial.⁷⁰ However, smoking rates on an aggregated zip code level tell a very different and more troubling story. While Brooklyn and Staten Island have the highest smoking rates, significant differences exist within each borough. These disparities are an especially daunting challenge that must be addressed. **(Figure 17)**⁷¹

Figure 17



The below map includes aggregate zip codes with smoking rates according to the New York City Department of Health and Mental Hygiene. **(Figure 18)**

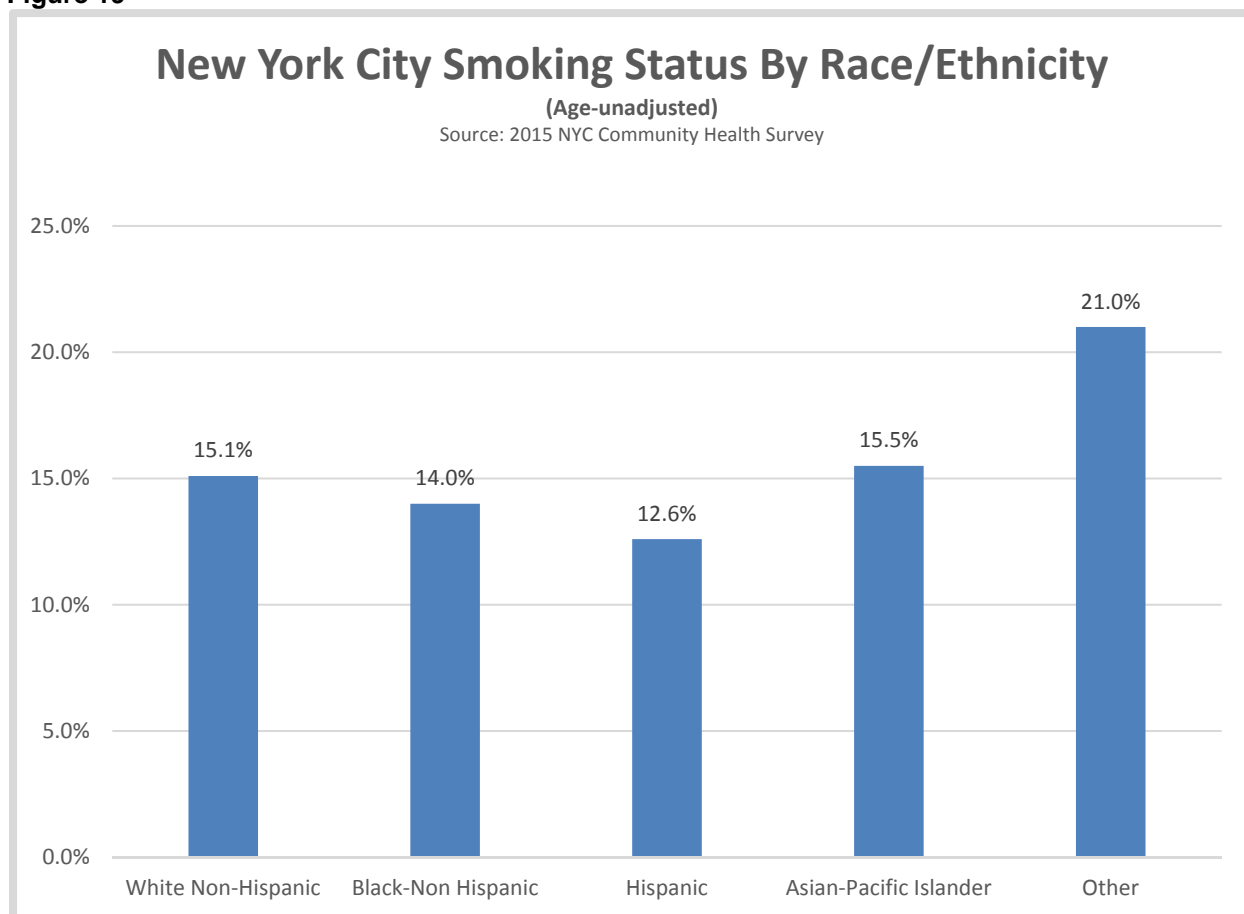
Figure 18



DISPARITIES IN TOBACCO USE

Although cigarette smoking has declined significantly in New York City since 2002, disparities in tobacco use remain across various groups. While different racial and ethnic groups smoke at similar rates (**Figure 19**)⁷², significant disparities exist by educational level and socioeconomic status across New York City.

Figure 19



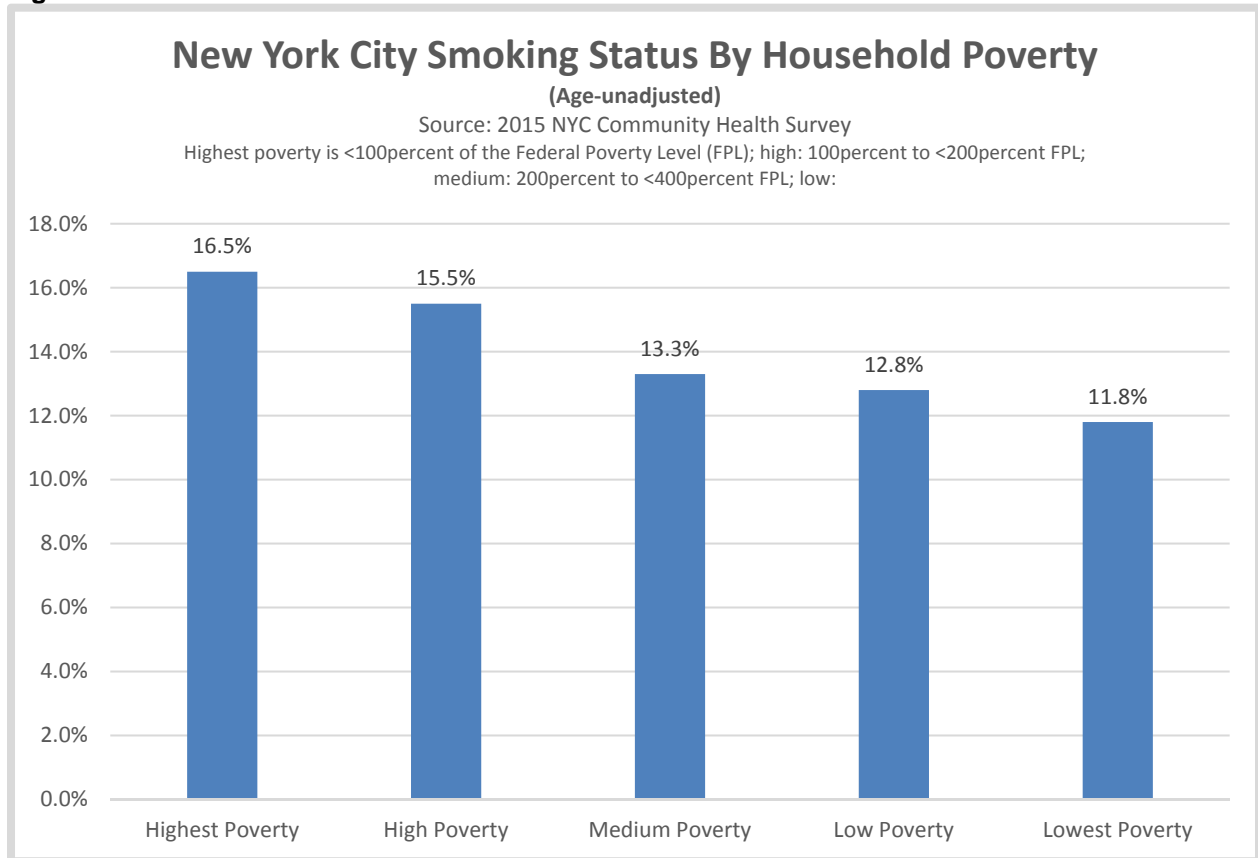
According to the U.S. Centers for Disease Control and Prevention, adults who have lower levels of educational attainment, who are unemployed or who live at, near or below the U.S. federal poverty level are considered to have low socioeconomic status (SES).⁷³

Cigarette smoking disproportionately affects the health of people with low SES.⁷⁴ Lower-income individuals who also smoke cigarettes suffer more from diseases caused by smoking than those with higher incomes. Secondhand smoke exposure is also higher among people living below the poverty line and those with less education. People of low SES are just as likely to attempt quitting, but are less likely to actually succeed in quitting smoking cigarettes. Tobacco companies often target advertising campaigns toward low-income neighborhoods and communities.

Smoking Rates by Categories That Define Lower Socioeconomic Status⁷⁵

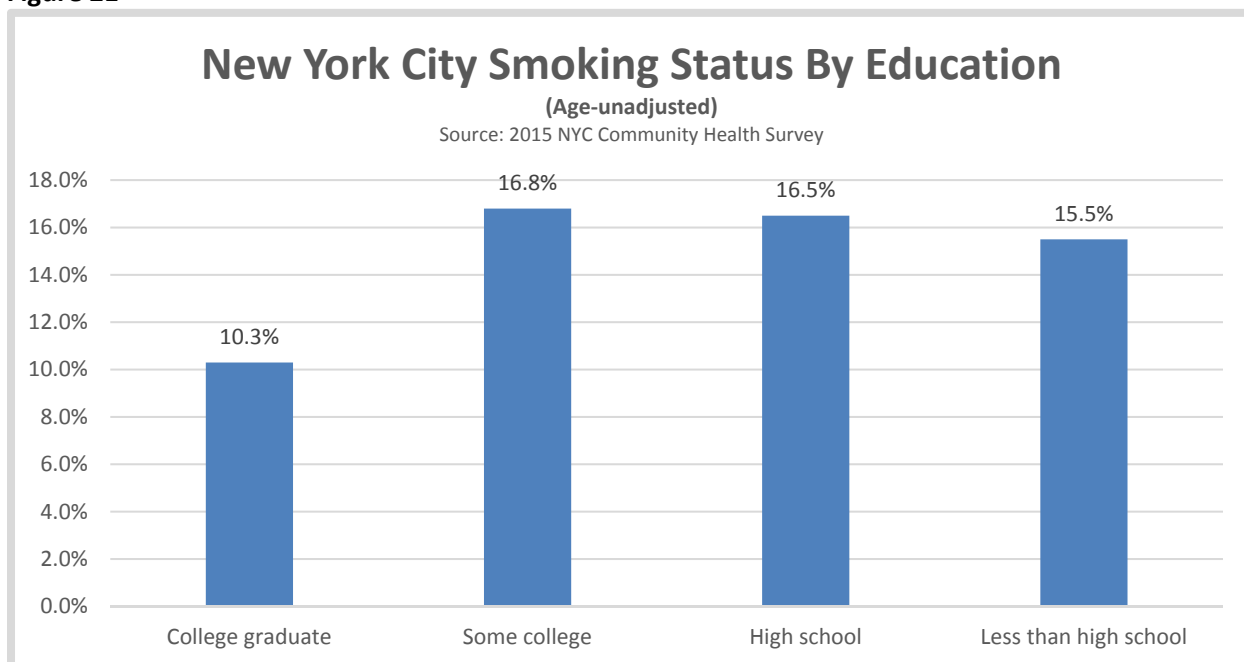
New Yorkers with the lowest income/highest level of poverty have a smoking rate of 16.5 percent while New Yorkers with the highest income/lowest poverty have a smoking rate of only 11.8 percent. **(Figure 20)**⁷⁶

Figure 20



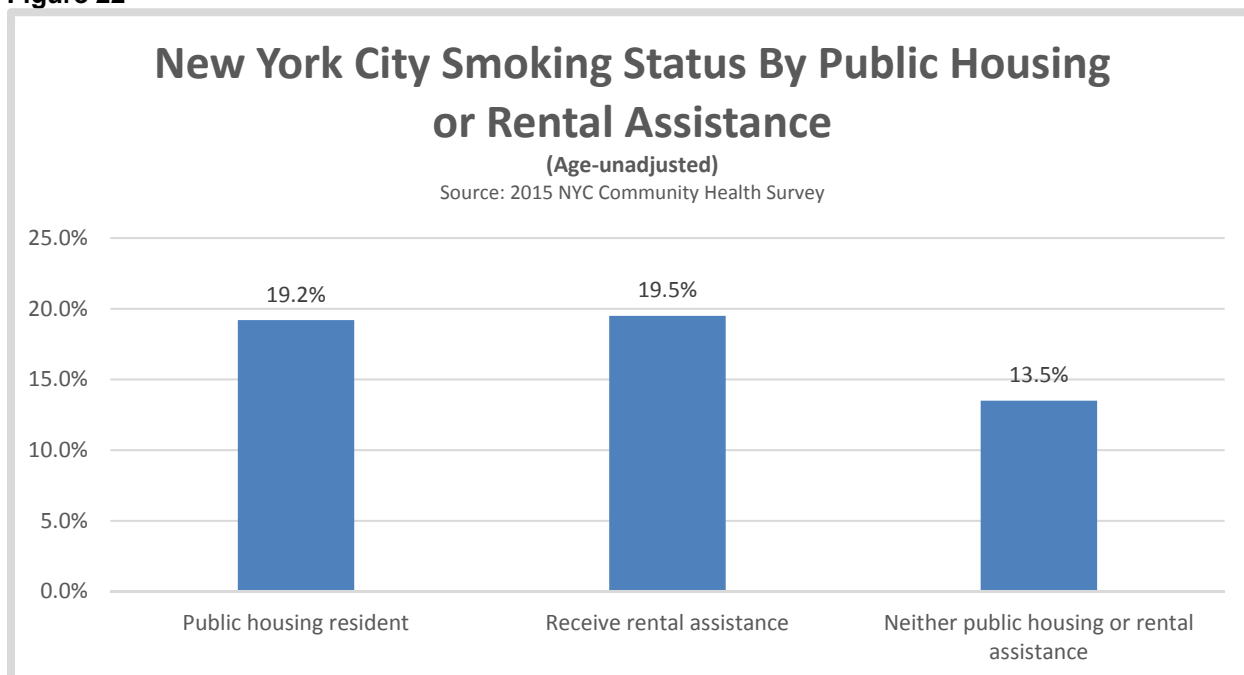
New Yorkers with less than a high school education have a smoking rate of 15.5 percent while New Yorkers with a college degree have a smoking rate of only 10.3 percent. **(Figure 21)**⁷⁷

Figure 21



New Yorkers who live in public housing (19.2 percent) or receive rental assistance (19.5 percent) are also significantly more likely to smoke than New Yorkers who do not live in public housing or receive rental assistance (13.5 percent). **(Figure 22)**⁷⁸

Figure 22



Type of Smoking Behavior⁷⁹

There are three different types of smoking behavior tracked by the New York City Department of Health and Mental Hygiene: non-daily smoker, light daily smoker and heavy daily smoker. People who smoke more than 10 cigarettes a day are considered heavy daily smokers. Those who smoke between one and 10 cigarettes a day are considered light daily smokers, and all other smokers are considered non-daily smokers, according to the New York City Department of Health and Mental Hygiene.

Citywide, 41.4 percent of smokers are non-daily smokers, 37.5 percent are light daily smokers and 21.1 percent of smokers are heavy daily smokers. **(Figure 23)**⁸⁰ That means nearly 80 percent of smokers are either non-daily smokers or light daily smokers.⁸¹ The same is true in four out of five boroughs. Only on Staten Island are heavy daily smokers nearly as common as non-daily or light daily smokers. **(Figures 24-28)**⁸²

Figure 23

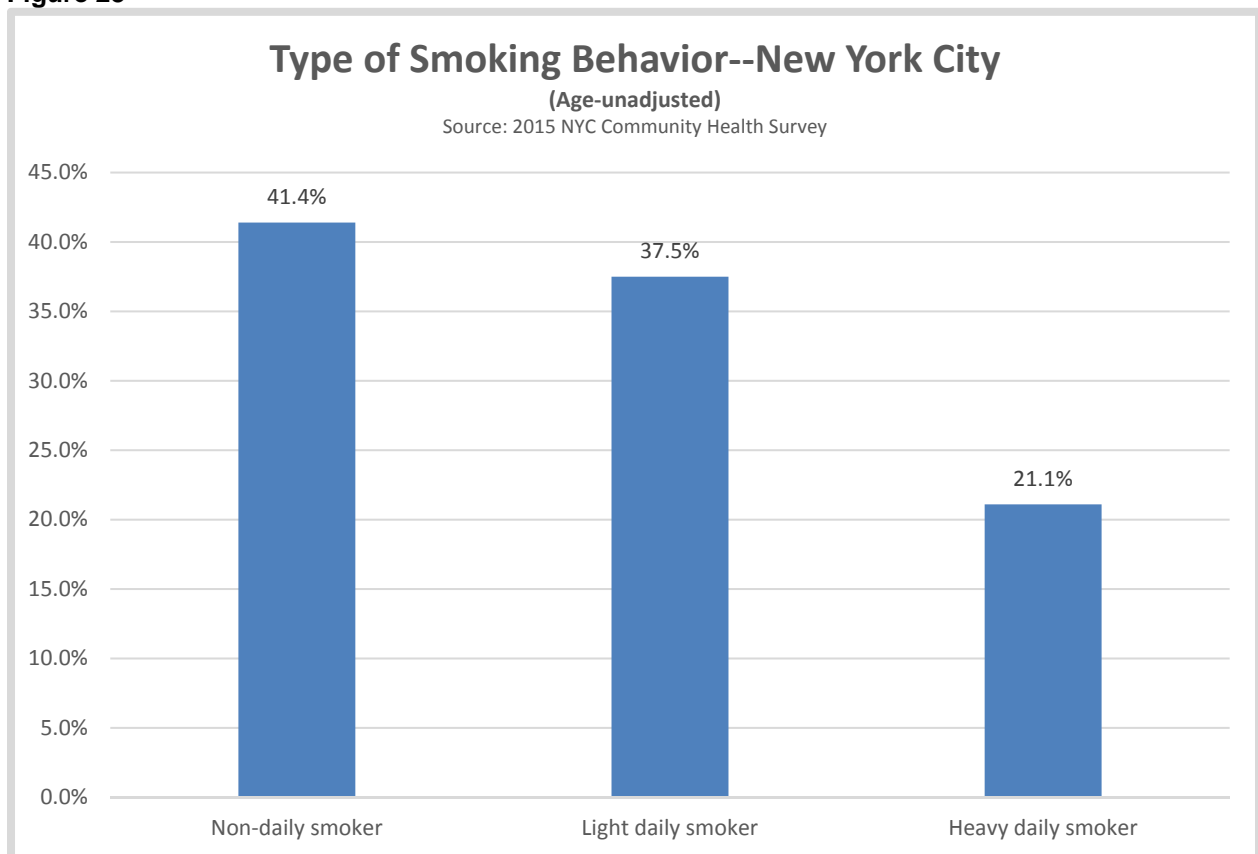


Figure 24

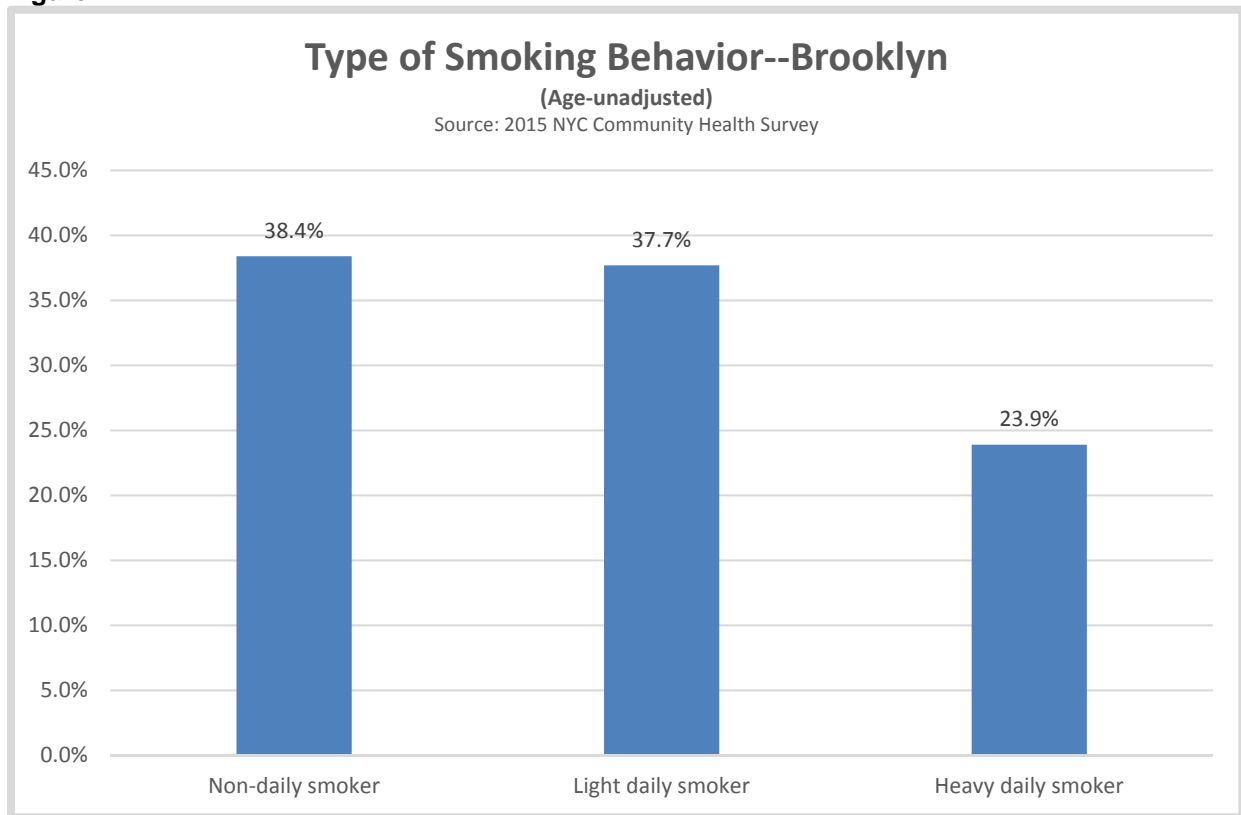


Figure 25

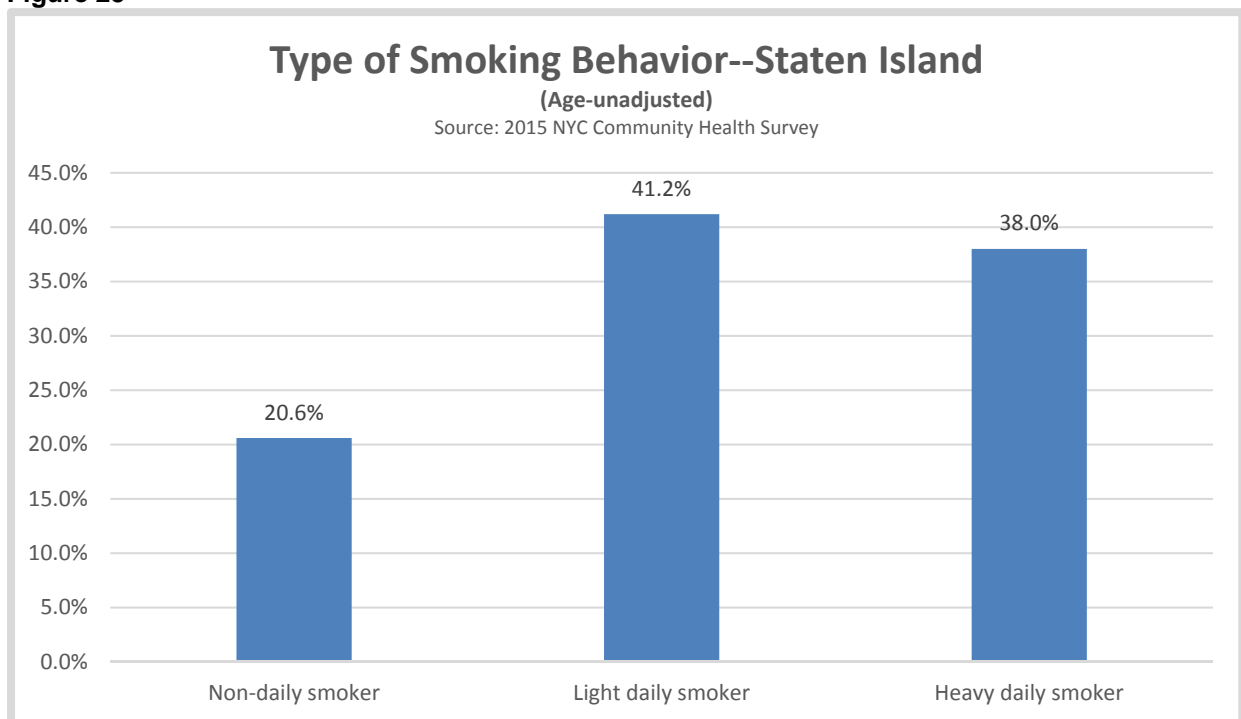


Figure 26

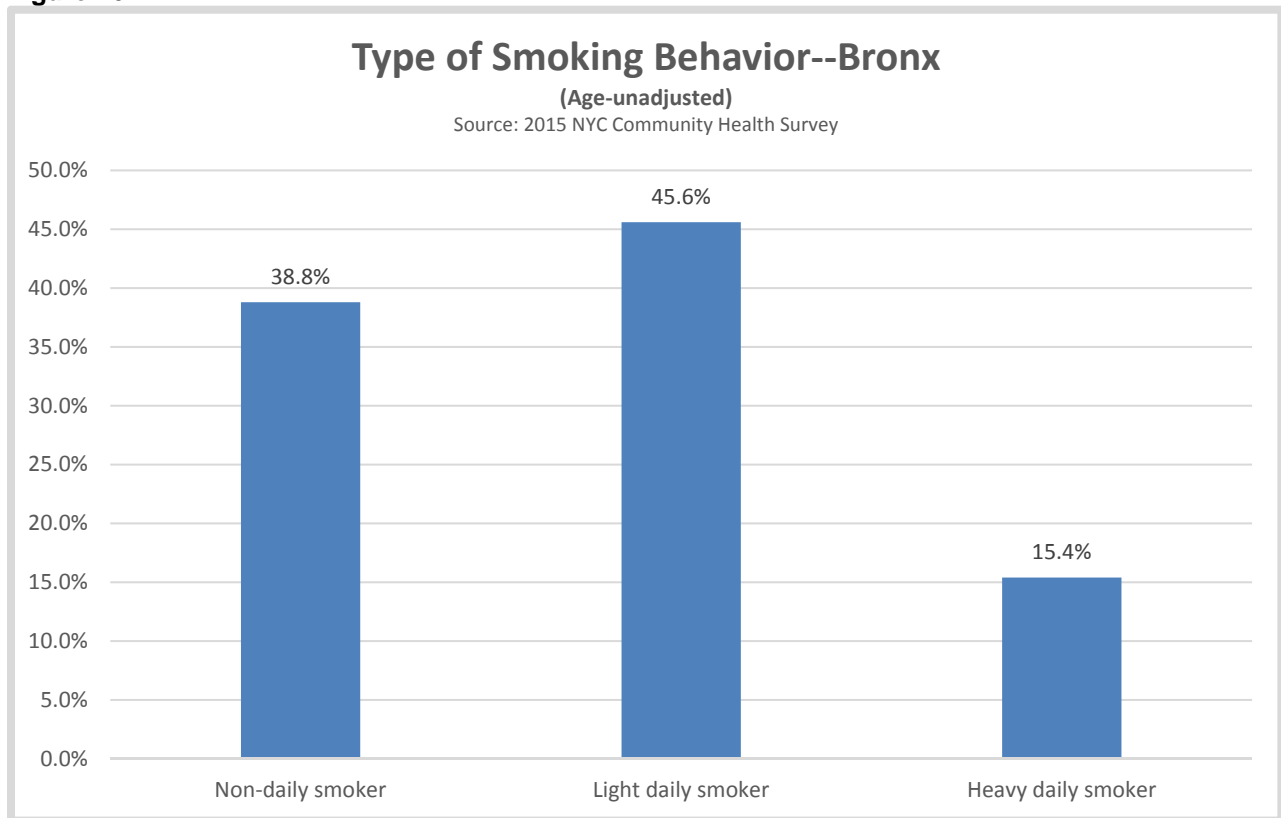


Figure 27

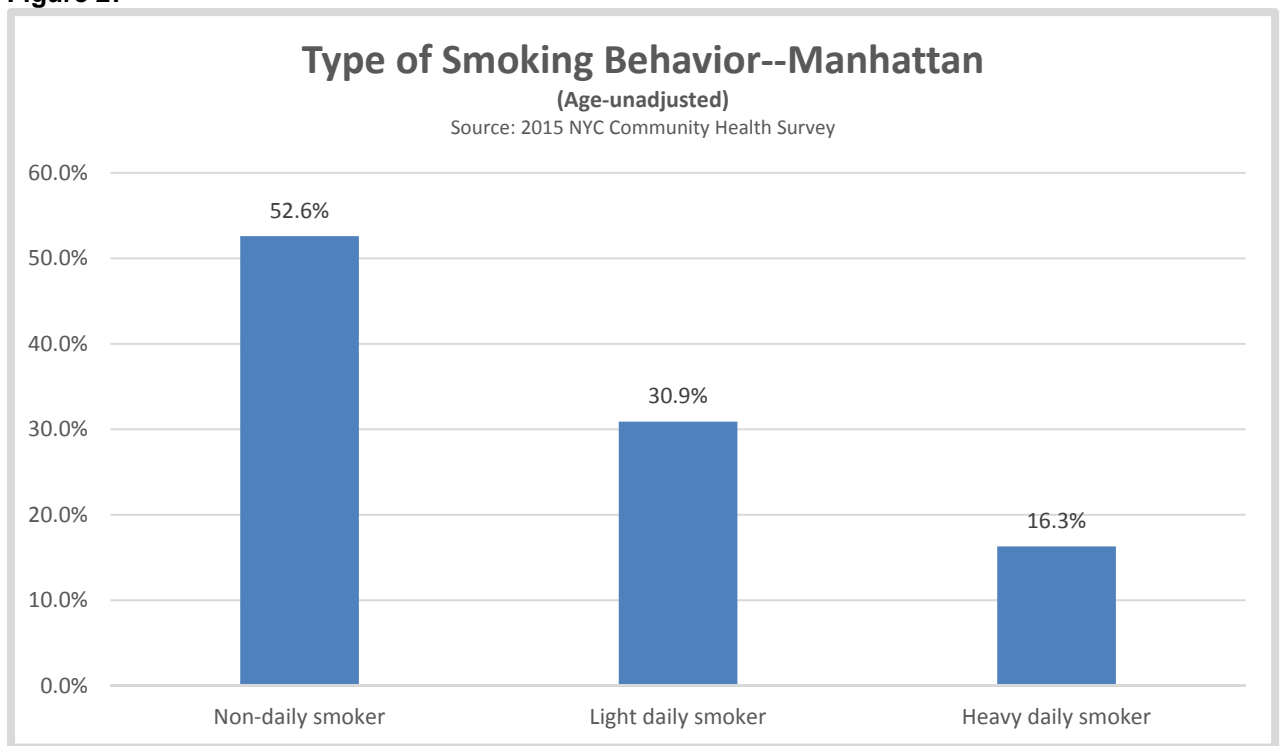
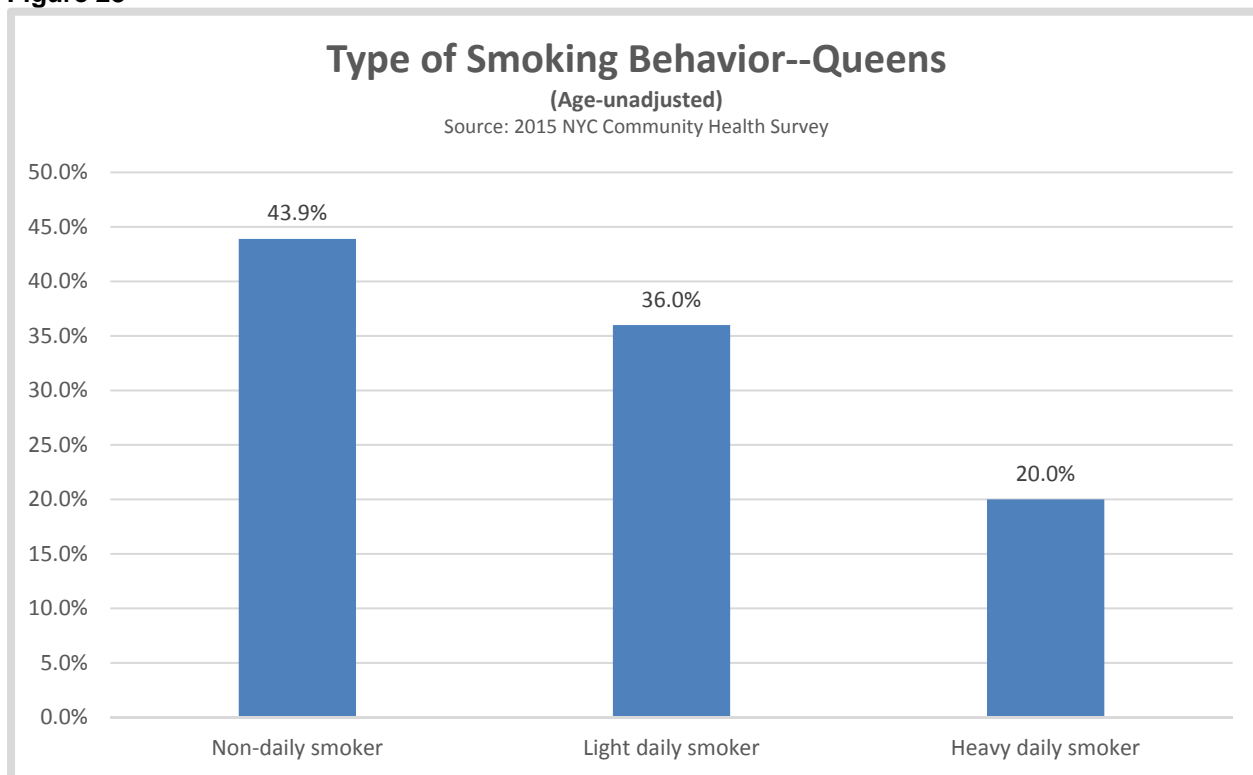


Figure 28



NEW YORK CITY ACTION

The New York City Department of Health and Mental Hygiene launched an aggressive, comprehensive tobacco control plan starting in 2002 consisting of five components: taxation, legislation, cessation, education and evaluation.⁸³ The result has been a decline in smoking rates by 33 percent since 2002.

Taxation:

New York City raised its cigarette tax in 2002 from \$0.08 to \$1.50 per pack. The increase brought the price per pack to almost \$7. New York state increased its cigarette tax by \$1.25 in 2008. The increase brought the total cost per pack to approximately \$8.50. The federal tax on cigarettes was increased by \$.62 in 2009, bringing the New York City total cost per pack to approximately \$9.20. New York State added a \$1.60 to its cigarette tax in 2010. The total tax on a pack of cigarettes in New York City is \$5.85, second only to Chicago, where a combined state and local tax is \$6.16 per pack. City, state and federal cigarette taxes have resulted in the average price for a pack of cigarettes being approximately \$11.20 as of 2013.⁸⁴

Legislation:

The Smoke-Free Air Act (SFAA) of 2002 made virtually all workplaces in New York City smoke-free, including restaurants and bars. In 2009, the SFAA was expanded to restrict smoking in all outdoor areas on hospital grounds and within 15 feet of hospital entrances and exits. Also in 2009, the New York City Council passed legislation restricting the sale of flavored non-cigarette tobacco products. To further protect against secondhand smoke exposure, the SFAA was expanded in 2011 mandating that all public parks, beaches and pedestrian plazas be smoke-free.

In 2013, a three-piece tobacco control package was passed by the New York City Council and signed into law by Mayor Michael Bloomberg that included prohibiting the sale of tobacco products to anyone under the age of 21, new rules on tobacco enforcement and a prohibition on the indoor use of electronic cigarettes. The tobacco enforcement legislation increased penalties for retail outlets that evade tobacco taxes or sell tobacco without a license, prohibits retail outlets from redeeming coupons, mandates a minimum price for cigarettes and little cigars, and requires cheap cigars and cigarillos be sold in packages of at least four and little cigars to be sold in packages of 20.

Cessation, Education and Evaluation:

Between 2006 and 2016, the New York City Department of Health and Mental Hygiene conducted media campaigns depicting the health consequences of smoking and testimonial ads from sick or dying smokers, encouraged calls to 311 and the New York State (NYS) Smokers' Quitline, and promoted a nicotine replacement therapy giveaway. The result was more than 750,000 calls from smokers looking to quit and 500,000 courses of nicotine patches, gum and lozenges given out to smokers looking to quit.⁸⁵ An annual Community Health Survey and a bi-annual Youth Risk Behavior Survey allows the New York City Department of Health and Mental Hygiene to continuously evaluate the results of its efforts to curb tobacco use in New York City.

RESEARCH AND BEST PRACTICES

While New York City has utilized the primary best practices in tobacco control, one underutilized approach is addressing the oversaturation of tobacco retail outlets.

By reducing the density of tobacco retail outlets, New York City can reduce the oversaturation of tobacco and ultimately reduce tobacco use. Research shows that requiring tobacco users to make a greater effort to find and obtain tobacco products will lead to a decrease in tobacco use, especially among youth.⁸⁶

Consumers are cost-sensitive to tobacco prices, meaning that they will purchase fewer cigarettes as the cost increases.⁸⁷ By reducing the density of tobacco retail outlets, customers will need to spend more time and money to purchase tobacco, which will ultimately reduce customers' tobacco use overall.⁸⁸

There are different approaches to reducing the impact that an oversaturation of tobacco retail outlets has on the health of a community. Research and experiences in other municipalities have shown the best approaches are to:

- Cap and gradually reduce the number tobacco retail licenses available in a community;
- Set a minimum distance that tobacco retail outlets must be from schools, other youth service entities and other licensed tobacco retail outlets; and
- Restrict sales in pharmacies and other health service entities.

Cap and reduce:

Establishing a cap on the number of tobacco retail outlets will reduce the number of outlets where community members can access or be exposed to deadly tobacco. In addition to improving health of the entire population, establishing a cap protects low-income communities and communities of color that have disproportionately high numbers of tobacco retail outlets in their neighborhoods, as well as disproportionately higher smoking rates. Through a process of attrition of stores with licenses that are either revoked through normal processes, or by licenses that are not renewed, a cap will gradually reduce the number of tobacco retail outlets.

The National Academies of Sciences, Engineering, and Medicine, a national advisory body on health policy, has called for regulations to reduce the number and density of tobacco outlets as an important prevention approach.⁸⁹

Data indicates that the concentration of tobacco outlets within neighborhoods where the tobacco industry uses deliberate marketing strategies targeting low income and racially/ethnically diverse communities is directly related to the likelihood of smoking.⁹⁰ The industry does this targeting through price discounts, culturally customized ad content, promotional giveaways and product placement.

In 2014, the San Francisco Board of Supervisors unanimously voted to cap the number of retail outlets that can sell tobacco in San Francisco. The policy established a cap on

the number of available licenses in each of the city's supervisory districts that was the equivalent to half of their original total.⁹¹

San Francisco projects that under the new policy it will take a decade for the number of tobacco retail licenses to be reduced to at or below the new cap per district. However, the impact of the policy on the number of licenses across the city and in each district is already noticeable in the data. The number of tobacco retail outlet licenses in San Francisco decreased by 8 percent in the first 10 months since the density policy took effect. All supervisorial districts have seen decreases in the number of tobacco retail outlet licenses. The districts with the highest number of retail outlet licenses before the policy went into effect have seen the greatest declines. District 6, which has one of the highest density of retail outlets, has lost 13 percent of its tobacco retail outlet licenses in the same time period.⁹²

In December 2016, the Philadelphia Board of Health approved a cap on the number of retail licenses that specifically targets residential neighborhoods. Starting in February 2017, one sales permit per 1,000 people will be available. The Philadelphia retail policy also prohibits new tobacco retail outlets within 500 feet of schools.⁹³

Proximity restrictions:

Prohibiting tobacco sales near schools can help reduce youth exposure to tobacco both by removing access to the product and by eliminating the accompanying advertising. Studies have shown tobacco advertising to be more prevalent in stores where adolescents are likely to shop and in stores located near schools.⁹⁴

Tobacco retail outlets are an important marketing channel for reaching and attracting potential new users. Exposure to promotional activities and marketing has been shown to affect tobacco use initiation rates among adolescents, particularly when the stores are close to schools.⁹⁵ Youth who live or go to schools in neighborhoods with the highest density of tobacco retail outlets or with the highest density of retail tobacco advertising have higher smoking rates compared to youth who attend school or live in neighborhoods with fewer or no tobacco outlets.⁹⁶

Restricting the proximity of tobacco retail outlets to each other reduces the density of tobacco retail outlets and ultimately of tobacco marketing. Marketing of tobacco products is prevalent at tobacco retail outlets. Thus, a high density of tobacco retail outlets means a concentration of tobacco marketing, exposing children, youth and adults to environmental cues which encourage tobacco use.⁹⁷ Additionally, high densities of tobacco retail outlets are linked to increased adult smoking rates.⁹⁸

Prohibiting tobacco sales within 1,000 feet of schools could reduce disparities in tobacco retail outlet density. Density is often higher in low-income and minority neighborhoods.⁹⁹ One study found that prohibiting tobacco sales within 1,000 feet of schools would not only reduce density across the board, but would nearly eliminate existing disparities in tobacco retail outlet density between neighborhoods.¹⁰⁰

Several localities have had success prohibiting tobacco retail outlets near schools. In 2010, Santa Clara County, California, passed an ordinance prohibiting any new tobacco retail outlets from opening within 1,000 feet of a school or 500 feet of another tobacco retail outlet. Nearly one third of retail outlets in the unincorporated areas decided to end their tobacco sales as result, and 73 percent reported that they would support prohibiting tobacco sales within 1,000 feet of a school to reduce tobacco use among youth.¹⁰¹

In 2013, Chicago prohibited the sale of all flavored tobacco products including menthol within 500 feet of schools. In 2009, New Orleans limited the sale of tobacco within 300 feet of schools.

Prohibiting tobacco sales in pharmacies:

Tobacco-free pharmacies reduce access to all tobacco products, which will help prevent kids from forming a lifelong addiction as well as help support those who are coming to the pharmacy for help quitting.

Pharmacies are in the business of improving health; however, they represent nearly 5 percent of cigarette sales.¹⁰² Cigarette sales declined by 17 percent between 2005-2009, but increased in pharmacies by 23 percent during the same timeframe.¹⁰³ It is a contradiction for pharmacies to be a facilitator of health and wellness while selling cigarettes and tobacco products. Selling these products side-by-side helps to normalize tobacco use, and serves to further obscure the deadliness of these products. The CVS Pharmacy chain acknowledged this in 2015 when it voluntarily gave up tobacco sales at all of its stores nationwide.

Research shows that pharmacists and the public support removing tobacco products from pharmacies. A 2014 survey showed two-thirds of Americans support prohibiting tobacco sales in pharmacies, including nearly half of smokers.¹⁰⁴

Prohibiting tobacco sales in pharmacies reduces the density of tobacco retail outlets. Cities in Massachusetts and California that have prohibited the sale of tobacco products in pharmacies saw a three times greater reduction in tobacco retail outlet density than cities that did not.¹⁰⁵ Another study predicted that prohibiting tobacco sales in pharmacies in North Carolina found that it would reduce retail outlets in the state by over 1,000 and reduce density by 13.9 percent.¹⁰⁶

Over 150 municipalities around the country have prohibited tobacco sales in pharmacies.¹⁰⁷

ACS CAN POLICY RECOMMENDATIONS

Municipalities looking to further reduce tobacco use can look at both research and practical examples for how to use licensing and zoning rules to reduce the impact of tobacco retail outlets.

Restricting the number and location of tobacco retail outlets will have a greater impact on municipalities where the intensity of smokers is lower. Non-daily or light daily smokers are more likely to be discouraged from smoking by policies that make it more difficult to access tobacco.

Since more than 80 percent of smokers in New York City are either non-daily smokers or light daily smokers, a policy that would reduce availability of tobacco would have a significant impact on smoking rates in New York City.

There is a clear need to address the oversaturation of licensed tobacco retail outlets in New York City. Based on the retail climate in New York City, specific New York City demographics and the best available research, ACS CAN recommends five steps that New York City should take to address this problem:

- 1) Establish a cap on licenses:** New York City should establish a cap on the number of retail tobacco licenses in each Community District at 50 percent of their current level. No new licenses should be issued in a Community District until the number of licenses in that Community District is at or below the newly established cap.
- 2) Restrict access near youth-service entities:** New York City should prohibit new tobacco retail licenses from being issued to any new applicant located within 1,000 feet of schools, houses of worship, playgrounds, libraries and other youth-service entities.
- 3) Restrict retail outlet proximity to each other:** New York City should prohibit new tobacco retail licenses from being issued to any new applicant located within 1,000 feet of a current licensed tobacco retail outlet.
- 4) Restrict all tobacco sales in pharmacies:** All retail stores that contain a pharmacy or other places of business that provide any form of health service should be prohibited from selling tobacco.
- 5) Include other tobacco products:** The current tobacco retail license in New York City does not cover the sale of tobacco products other than cigarettes, cigars or cigarillos. The licensing requirement should be extended to all tobacco products, including e-cigarettes and hookah.

CONCLUSION

Despite a 33 percent decline in the smoking rate in New York City in the past decade and a half, there is still much more work to be done in the fight against this deadly product. New York City could make significant progress in reducing premature deaths while dramatically reducing racial/ethnic disparities in mortality rates by tackling the oversaturation of tobacco retail outlets in New York City. While New York City has been a global leader in the fight for public health, the death toll from tobacco demands New York City do more.

New Yorkers do not need any more tobacco retail outlets. It is currently too easy to access deadly tobacco products. By ending the oversaturation of tobacco in our neighborhoods we can drive down smoking rates and save lives.

As a result of New York City's high population density and the high number of non-daily and light daily smokers, a policy reducing the number and location of licensed tobacco retail outlets in New York City would have a significant impact on smoking rates and the overall health of New York City residents, commuters and visitors to New York City.

While reducing the number and density of licensed tobacco retail outlets is not a silver bullet and will not on its own end all tobacco use, the following actions will go a long way toward improving public health and should be strongly considered.

ACS CAN calls on New York City leaders to immediately act on the above mentioned recommendations.

CITATIONS

- ¹ New York City Department of Health and Mental Hygiene, Promoting and Protecting the City's Health, <https://www1.nyc.gov/site/doh/health/health-topics/smoking.page>
- ² American Cancer Society Cancer Action Network: New York State Cancer Burden Report. 2012
- ³ American Cancer Society, Tobacco and Cancer, <https://www.cancer.org/cancer/cancer-causes/tobacco-and-cancer/health-risks-of-smoking-tobacco.html>
- ⁴ Type of smoker by Borough; NYC Community Health Survey 2014 <https://a816-healthpsi.nyc.gov/epiquery/sasresults.jsp>
- ⁵ NYC Open Data, <https://data.cityofnewyork.us/Business/Legally-Operating-Businesses/w7w3-xahh>
- ⁶ Center For an Urban Future, State of the Chains 2015, <https://nycfuture.org/research/state-of-the-chains-2015>
- ⁷ NYC Open Data, New York City Restaurant Inspection Results
- ⁸ NYC "Facilities" file, <https://data.cityofnewyork.us/download/ibjs-7vdf/application%2Fzip>
- ⁹ Starbucks Store Locator, <https://www.starbucks.com/store-locator?map=40.667451,-73.982114,12z>
- ¹⁰ United States Census, <http://www.census.gov/quickfacts/table/PST045215/3651000>, 2010
- ¹¹ New York City Department of Parks and Recreation, Playgrounds, www.nycgovparks.org
- ¹² New York City Mayor's Management Report, 2015, http://www1.nyc.gov/assets/operations/downloads/pdf/mmr2016/2016_mmr.pdf
- ¹³ Aleksey Bilogur, CUNY Baruch; <https://github.com/ResidentMario/nyc-tobacco>
- ¹⁴ NYC Open Data, <https://data.cityofnewyork.us/Business/Legally-Operating-Businesses/w7w3-xahh>; Analysis conducted by Dr. Jochen Albrecht, Computational and Theoretical Geography, Hunter College, CUNY
- ¹⁵ NYC Open Data, <https://data.cityofnewyork.us/Business/Legally-Operating-Businesses/w7w3-xahh>; Analysis conducted by Dr. Jochen Albrecht, Computational and Theoretical Geography, Hunter College, CUNY
- ¹⁶ NYC Open Data, <https://data.cityofnewyork.us/Business/Legally-Operating-Businesses/w7w3-xahh>
- ¹⁷ OneNYC. <http://www.nyc.gov/html/onenyc/downloads/pdf/publications/OneNYC.pdf>
- ¹⁸ OneNYC. <http://www.nyc.gov/html/onenyc/downloads/pdf/publications/OneNYC.pdf>
- ¹⁹ OneNYC. <http://www.nyc.gov/html/onenyc/downloads/pdf/publications/OneNYC.pdf>
- ²⁰ New York State Department of Health Cancer Registry, https://www.health.ny.gov/statistics/leadingcauses_death/pm_nyc_by_year.htm
- ²¹ Source: New York State Department of Health, Leading Causes of Premature Death, https://www.health.ny.gov/statistics/leadingcauses_death/pm_deaths_by_county.htm
- ²² New York City Department of Health and Mental Hygiene, <https://www1.nyc.gov/assets/doh/downloads/pdf/notice/2014/noa13.pdf>
- ²³ New York City Department of Health and Mental Hygiene, Promoting and Protecting the City's Health, <https://www1.nyc.gov/site/doh/health/health-topics/smoking.page>
- ²⁴ Centers for Disease Control and Prevention. Current cigarette smoking among adults in the United States. http://www.cdc.gov/tobacco/data_statistics/fact_sheets/adult_data/cig_smoking. Updated March 14, 2016. Accessed April 5, 2016.
- ²⁵ 2. Health department announces an eight-year decline in smoking-related deaths in New York City as smoking remains at an all-time low [press release]. New York, NY: New York City Department of Health and Mental Hygiene; October 28, 2010. 3. Guest relations/FAQ. MSG Sports & Entertainment. <http://www.thegarden.com/faq.html>. Accessed March 3, 2016.
- ²⁶ U.S. Department of Health and Human Services. The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014 [accessed 2015 Oct 5]; U.S. Department of Health and Human Services. How Tobacco Smoke Causes Disease: What It Means to You. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2010 [accessed 2015 Oct 5].
- ²⁷ U.S. Department of Health and Human Services. The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General, 2014. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014.
- ²⁸ New York State Department of Health Cancer Registry, <https://www.health.ny.gov/statistics/cancer/registry/pdf/volume1.pdf>
- ²⁹ American Cancer Society, <https://www.cancer.org/cancer/cancer-causes/tobacco-and-cancer/health-risks-of-smoking-tobacco.html>
- ³⁰ Campaign for Tobacco Free Kids. Fact Sheet: The Toll of Tobacco in New York. May 12, 2015
- ³¹ Campaign for Tobacco Free Kids. Fact Sheet: The Toll of Tobacco in New York. May 12, 2015
- ³² Campaign for Tobacco Free Kids. Fact Sheet: The Toll of Tobacco in New York. May 12, 2015
- ³³ NYC Open Data, <https://data.cityofnewyork.us/Business/Legally-Operating-Businesses/w7w3-xahh>
- ³⁴ NYC Open Data, <https://data.cityofnewyork.us/Business/Legally-Operating-Businesses/w7w3-xahh>
- ³⁵ Center For an Urban Future, State of the Chains 2015, <https://nycfuture.org/research/state-of-the-chains-2015>
- ³⁶ NYC Open Data, New York City Restaurant Inspection Results
- ³⁷ NYC "Facilities" file, <https://data.cityofnewyork.us/download/ibjs-7vdf/application%2Fzip>
- ³⁸ Starbucks Store Locator, <https://www.starbucks.com/store-locator?map=40.667451,-73.982114,12z>
- ³⁹ New York State Department of Health, Population, Land Area, and Population Density by County, New York State – 2010, retrieved on August 8, 2015.
- ⁴⁰ New York City Department of Health and Mental Hygiene, 2015 NYC Community Health Survey
- ⁴¹ New York City Mobility Report, 2016, <http://www.nyc.gov/html/dot/downloads/pdf/mobility-report-2016-print.pdf>
- ⁴² Tri-State Transportation Campaign and the Pratt Center for Community Development, "Staten Island" (PDF). 7 March 2008. Retrieved December 6, 2014.

- ⁴³ New York City Department of Health and Mental Hygiene, District Public Health Data, <https://www1.nyc.gov/site/doh/health/health-topics/district-public-health-offices.page>
- ⁴⁴ New York City Department of Health and Mental Hygiene, 2015 NYC Community Health Survey
- ⁴⁵ Aleksey Bilogur, CUNY Baruch; <https://github.com/ResidentMario/nyc-tobacco>
- ⁴⁶ Aleksey Bilogur, CUNY Baruch; <https://github.com/ResidentMario/nyc-tobacco>
- ⁴⁷ Aleksey Bilogur, CUNY Baruch; <https://github.com/ResidentMario/nyc-tobacco>
- ⁴⁸ NYC Open Data, <https://data.cityofnewyork.us/Business/Legally-Operating-Businesses/w7w3-xahh>; Analysis conducted by Dr. Jochen Albrecht, Computational and Theoretical Geography, Hunter College, CUNY
- ⁴⁹ NYC Open Data, <https://data.cityofnewyork.us/Business/Legally-Operating-Businesses/w7w3-xahh>; Analysis conducted by Dr. Jochen Albrecht, Computational and Theoretical Geography, Hunter College, CUNY
- ⁵⁰ New York State Liquor Authority, <http://www.sla.ny.gov/system/files/200-500-foot-rules-050213.pdf>
- ⁵¹ Tobacco Free New York State, Reducing Store Marketing, <http://www.tobaccofreenys.org/reducing-store-marketing/>
- ⁵² New York City Department of Health and Mental Hygiene. New York City Youth Risk Behavior Survey 2015
- ⁵³ Centers for Disease Control and Prevention. "Projected smoking-related deaths among youth--United States." *MMWR*. 45(44). 1996
- ⁵⁴ Tobacco Free New York State, Reducing Store Marketing, <http://www.tobaccofreenys.org/reducing-store-marketing/>
- ⁵⁵ Tobacco Free New York State, Reducing Store Marketing, <http://www.tobaccofreenys.org/reducing-store-marketing/>
- ⁵⁶ Tobacco Free New York State, <http://www.tobaccofreenys.org/reducing-store-marketing/>
- ⁵⁷ NYC Smoke-Free, A program of Public Health Solutions, <http://nycsmokefree.org/issues/tobacco-proliferation>
- ⁵⁸ New York City Mayor's Management Report, 2015, http://www1.nyc.gov/assets/operations/downloads/pdf/mmr2016/2016_mmr.pdf
- ⁵⁹ New York City Department of Parks and Recreation, Playgrounds, www.nycgovparks.org
- ⁶⁰ United States Census, <http://www.census.gov/quickfacts/table/PST045215/3651000>, 2010
- ⁶¹ New York City Department of Parks and Recreation, Playgrounds, www.nycgovparks.org
- ⁶² New York City Mayor's Management Report, 2015, http://www1.nyc.gov/assets/operations/downloads/pdf/mmr2016/2016_mmr.pdf
- ⁶³ NYC Open Data, <https://data.cityofnewyork.us/Business/Legally-Operating-Businesses/w7w3-xahh>; Analysis conducted by Dr. Jochen Albrecht, Computational and Theoretical Geography, Hunter College, CUNY
- ⁶⁴ New York State Liquor Authority, <http://www.sla.ny.gov/system/files/200-500-foot-rules-050213.pdf>
- ⁶⁵ New York City Independent Budget Office, New York City By The Numbers, <http://ibo.nyc.ny.us/cgi-park2/category/health/>
- ⁶⁶ New York City Department of Health and Mental Hygiene. Press Release, September 19, 2016
- ⁶⁷ New York City Department of Health and Mental Hygiene. Press Release, September 19, 2016
- ⁶⁸ New York City Department of Health and Mental Hygiene. New York City Youth Risk Behavior Survey 2015
- ⁶⁹ New York City Department of Health and Mental Hygiene. More and more New Yorkers recognizing that secondhand smoke is toxic. 5 May 2007. Print
- ⁷⁰ New York City Department of Health and Mental Hygiene. New York City Youth Risk Behavior Survey 2015.
- ⁷¹ New York City Department of Health and Mental Hygiene. New York City Youth Risk Behavior Survey 2015.
- ⁷² <http://www.cdc.gov/tobacco/disparities/>
- ⁷³ Garrett BE, Dube SR, Trosclair A, Caraballo RS, Pechacek TF. Cigarette Smoking—United States, 1965–2008. *Morbidity and Mortality Weekly Report Supplements* 2011; 60(01):109–13 [accessed 2016 Mar 29]
- ⁷⁴ Centers for Disease Control and Prevention, Cigarette Smoking and Tobacco Use Among People of Low Socioeconomic Status, <http://www.cdc.gov/tobacco/disparities/low-ses/index.htm>
- ⁷⁵ Centers for Disease Control and Prevention, Burden of Tobacco Use in the U.S., <http://www.cdc.gov/tobacco/campaign/tips/resources/data/cigarette-smoking-in-united-states.html#three>
- ⁷⁶ New York City Department of Health and Mental Hygiene, 2015 NYC Community Health Survey
- ⁷⁷ New York City Department of Health and Mental Hygiene, 2015 NYC Community Health Survey
- ⁷⁸ New York City Department of Health and Mental Hygiene, 2015 NYC Community Health Survey
- ⁷⁹ Type of smoker by Borough; NYC Community Health Survey 2014 <https://a816-healthpsi.nyc.gov/epiquery/sasresults.jsp>
- ⁸⁰ New York City Department of Health and Mental Hygiene, 2015 NYC Community Health Survey
- ⁸¹ New York City Department of Health and Mental Hygiene, 2015 NYC Community Health Survey
- ⁸² New York City Department of Health and Mental Hygiene, 2015 NYC Community Health Survey
- ⁸³ New York City Global Partners, Best Practice: Tobacco Control Program, http://www.nyc.gov/html/ia/gprb/downloads/pdf/NYC_Health_TobaccoControl.pdf
- ⁸⁴ New York City Global Partners, Best Practice: Tobacco Control Program, http://www.nyc.gov/html/ia/gprb/downloads/pdf/NYC_Health_TobaccoControl.pdf
- ⁸⁵ http://www.nyc.gov/html/ia/gprb/downloads/pdf/NYC_Health_TobaccoControl.pdf
- ⁸⁶ See Andrew Hyland et al., Tobacco Outlet Density and Demographics in Erie County, 93A.M. J. Pub. Health 1075, 1075, (2003); Robert L. Rabin, Tobacco Control Strategies; Past Efficacy and Future Promise, 41 LOY. L.A. L. REV. 1721, 1762, (2008).
- ⁸⁷ See, E.G., U.S. Dep't Of Health & Human Services, Reducing Tobacco Use: A Report Of The Surgeon General 326-23, 337 (2000); F. J. Chaloupka Et Al., Tax, Price And Cigarette Smoking: Evidence From The Tobacco Documents And Implications For Tobacco Company Marketing Strategies, 11 Tobacco Control I62, I63-I64 (Supp. I 2002).
- ⁸⁸ See, E.G., U.S. Dep't Of Health & Human Services, Reducing Tobacco Use: A Report Of The Surgeon General 326-23, 337 (2000); F. J. Chaloupka Et Al., Tax, Price And Cigarette Smoking: Evidence From The Tobacco Documents And Implications For Tobacco Company Marketing Strategies, 11 TOBACCO CONTROL I62, I63-I64 (Supp. I 2002).
- ⁸⁹ Institute of Medicine. (2007). Ending the tobacco problem: A blueprint for the nation. Washington DC: National Academies Press. Available at: <http://www.iom.edu/Reports/2007/Ending-the-Tobacco-Problem-A-Blueprint-for-the-Nation.aspx>

- ⁹⁰ Campaign for Tobacco Free Kids, Counter Tobacco, and the American Heart Association (2012) > Deadly alliance: How big tobacco and convenience stores partner to market tobacco products and fight life-saving policies. Retrieved on December 20, 2012, http://www.tobaccofreekids.org/what_we_do/industry_watch/store_report/
- ⁹¹ San Francisco Tobacco Free, Reducing Tobacco Retail Density in San Francisco (2016), <http://sanfranciscotobaccofreeproject.org/case-studies/reducing-tobacco-retail-density-in-san-francisco/>
- ⁹² San Francisco Tobacco Free, Reducing Tobacco Retail Density in San Francisco (2016), <http://sanfranciscotobaccofreeproject.org/case-studies/reducing-tobacco-retail-density-in-san-francisco/>
- ⁹³ <http://www.metro.us/philadelphia/philly-health-officials-approve-new-tobacco-sales-restrictions/zsJpli---tNh0x2cVTK1io/>
- ⁹⁴ Tobacco Control Legal Consortium. Location, Location, Location: Regulating Tobacco Retailer Locations for Public Health. <http://publichealthlawcenter.org/sites/default/files/resources/tclc-guide-regulating-retailer-locations-2014.pdf>
- ⁹⁵ Tobacco Control Legal Consortium. Location, Location, Location: Regulating Tobacco Retailer Locations for Public Health. <http://publichealthlawcenter.org/sites/default/files/resources/tclc-guide-regulating-retailer-locations-2014.pdf>
- ⁹⁶ Tobacco Control Legal Consortium. Location, Location, Location: Regulating Tobacco Retailer Locations for Public Health. <http://publichealthlawcenter.org/sites/default/files/resources/tclc-guide-regulating-retailer-locations-2014.pdf>
- ⁹⁷ Tobacco Control Legal Consortium. Location, Location, Location: Regulating Tobacco Retailer Locations for Public Health. <http://publichealthlawcenter.org/sites/default/files/resources/tclc-guide-regulating-retailer-locations-2014.pdf>
- ⁹⁸ Tobacco Control Legal Consortium. Location, Location, Location: Regulating Tobacco Retailer Locations for Public Health. <http://publichealthlawcenter.org/sites/default/files/resources/tclc-guide-regulating-retailer-locations-2014.pdf>
- ⁹⁹ Counter Tobacco.org, Banning Tobacco Retailers Near Schools, <http://countertobacco.org/resources-tools/evidence-summaries/stores-near-schools/>
- ¹⁰⁰ Society for Research on Nicotine and Tobacco: Reducing Disparities in Tobacco Retailer Density by Banning Tobacco Product Sales Near Schools, 2016. <https://doi.org/10.1093/ntr/ntw185>
- ¹⁰¹ Counter Tobacco.org, Banning Tobacco Retailers Near Schools, <http://countertobacco.org/resources-tools/evidence-summaries/stores-near-schools/>
- ¹⁰² Seidenberg AB, Behm I, Rees VW, Connolly GN. Cigarette Sales in Pharmacies in the USA (2005-2009). *Tobacco Control* 2012; 21:509-510.
- ¹⁰³ Seidenberg AB, Behm I, Rees VW, Connolly GN. Cigarette Sales in Pharmacies in the USA (2005-2009). *Tobacco Control* 2012; 21:509-510.
- ¹⁰⁴ Wang TW, Agaku IT, Marynak KL, King BA. Attitudes Toward Prohibiting Tobacco Sales in Pharmacy Stores Among U.S. Adults. *American Journal of Preventive Medicine*. December 2016; 51:6: 1038-1043.
- ¹⁰⁵ Jin Y, Lu B, Klein EG, Berman M, Foraker RE, Ferketich AK. Tobacco-Free Pharmacy Laws and Trends in Tobacco Retailer Density in California and Massachusetts. *American Journal of Public Health*. 2016: April; 106 (4): 679-85.
- ¹⁰⁶ Myers AE, Hall MG, Isgett LF, Ribisl KM. A Comparison of Three Policy Approaches for Tobacco Retailer Reduction.
- ¹⁰⁷ Counter Tobacco.org, Tobacco Free Pharmacies, <http://countertobacco.org/policy/tobacco-free-pharmacies/>

