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# **FoodStat**

## Measuring the Retail Food Environment in NYC Neighborhoods

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Manhattan Borough President  
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## I. BACKGROUND: Policymakers Confront The Retail Food Landscape

According to the New York City Department of Health, “more than half of adult New Yorkers are overweight (34%) or obese (22%) and nearly half of elementary school children (43%) and Head Start children (42%) in New York City are overweight or obese.”<sup>1</sup> Being overweight or obese is correlated with higher risk of heart disease, hypertension, depression, type II diabetes, among other health problems.

Research has shown that the food options available in a neighborhood influence what local consumers eat.<sup>2</sup> The retail food environment – the collection of local supermarkets, restaurants, bodegas, and produce vendors – can affect local residents’ health. High rates of hunger and obesity are often found in neighborhoods where residents have the lowest incomes, the least education, and among certain ethnic groups.<sup>3</sup> Unhealthy options often cost less calorie-to-calorie.<sup>4</sup>

The linkage between public health problems resulting from poor diet, and the retail food environment found in a community is, in part, common sense. Personal responsibility for one’s diet and the decision to eat more fruits and vegetables is, on its own, not enough. Consumers also require a “food environment” in which healthy choices can be readily identified and purchased.<sup>5</sup> New empirical research shows the link between food environment and health. A study issued last month by economists at Columbia University and the University of California at Berkeley made headlines by tying the presence of fast food chains within 500 feet of a school to higher obesity rates among students.<sup>6</sup>

Until recently, to combat public health problems resulting from poor diet and nutrition, public policies relied upon improving health care services, expanding nutrition education, and urging individuals to take more personal responsibility for their diets and exercise. Yet this mix of government responses ignores what may be the most damaging and fixable factor causing our increasingly obese and overweight population: the food environment.

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<sup>1</sup> Excerpted from the New York City Department of Health and Mental Hygiene website on Physical Activity and Nutrition: [http://www.nyc.gov/html/doh/html/cdp/cdp\\_pan.shtml](http://www.nyc.gov/html/doh/html/cdp/cdp_pan.shtml)

<sup>2</sup> Department of Health and Mental Hygiene. “Eating Well in Harlem: How Available is Healthy Food?” Eating Well in Harlem: How Available Is Healthy Food? A Report from the East and Central Harlem District Public Health Office, May 2007:<<http://www.nyc.gov/html/doh/downloads/pdf/dpho/dpho-harlem-report2007.pdf>>.

<sup>3</sup> Cummins, S. & Macintyre, S. 2006. Food environments and obesity – neighbourhood or nation? *International Journal of Epidemiology* 35: 100-4.

<sup>4</sup> “Reversing Obesity in New York City: An Action Plan for Reducing the Promotion and Accessibility of Unhealthy Food.” City University of New York Campaign against Diabetes and Public Health Association of New York City. December, 2008.

<sup>5</sup> Ibid

<sup>6</sup> Janet Currie, Stefano DellaVigna, Enrico Moretti, Vikram Pathania. American Association of Wine Economists. AAWE Working Paper No. 33 Economics. “The Effects of Fast Food Restaurants on Obesity.” February 2009. [http://www.wine-economics.org/workingpapers/AAWE\\_WP33.pdf](http://www.wine-economics.org/workingpapers/AAWE_WP33.pdf)

In order to tackle the obesity epidemic and to reduce diet related health problems, policymakers in cities and states across the United States have begun developing public policies to improve the retail food environment.

One such approach is to find ways to retain or create new healthy food options. For instance, to address Philadelphia's supermarket shortage, the state legislature created the Pennsylvania Fresh Food Financing Initiative to promote supermarkets in underserved neighborhoods through loans and grants. Cleveland, Ohio, which recently created a zoning classification for an Urban Garden District, hosts 25 for-profit farms within city boundaries and has increased its number of farmers' markets by 600 percent since hiring a sustainability manager in 2005.<sup>7</sup> Finally, in January of 2006, the City Council of Oakley, California passed a resolution, authorizing the Mayor's Office of Sustainability to develop a Food Policy and Plan to ensure that at least 30 percent of the City's food needs will be sourced locally.<sup>8</sup>

An alternative to increasing healthy food options is to limit unhealthy food options. During the past three decades, three trends have coincided: the rate of obesity has reached epidemic proportions; the number of Americans who eat away from home has risen; and the "fast food" industry has become the fastest growing segment of the United States food distribution system.<sup>9</sup> In response to high obesity rates and over-saturation of fast food chains, the Los Angeles City Council voted unanimously last summer to impose a one-year moratorium on new development of fast food chains in a 32 square mile region of the city. The moratorium, which excluded made-to-order fast food restaurants such as Subway, was aimed to provide the city with time to attract new restaurants with healthier options.<sup>10</sup>

New York City has made headlines by banning trans fat and requiring calorie count posting in chain restaurants. Other initiatives aimed at improving the retail food environment include the Green Carts program, the Healthy Bodegas Initiative, Health Bucks, as well as increased availability of Electronic Benefits Transfer (EBT) machines at farmers markets, which are all designed to increase access to fresh produce for low-income New Yorkers. The Department of City Planning, which identified more than a dozen neighborhoods with limited access to fresh produce, is exploring ways to promote supermarkets.<sup>11</sup> Similarly, in 2008, City Council Speaker Chris Quinn announced a Statewide Supermarket Commission, which tasked advocates, industry leaders, labor

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<sup>7</sup> Sustain Lane "2008 US City Rankings": <http://www.sustainlane.com/us-city-rankings/cities/cleveland>

<sup>8</sup> Serena Unger and Heather Wooten. "A Food Systems Assessment for Oakland, CA: Toward A Sustainable Food Plan." Oakland Mayor's Office of Sustainability and University of California, Berkeley, Department of City and Regional Planning. May 24, 2006.

<sup>9</sup> "The Use of Zoning to Restrict Fast Food Outlets: A Potential Strategy to Combat Obesity." The Center for Law and the Public's Health at Johns Hopkins and Georgetown Universities. October 2005. <http://www.publichealthlaw.net/Zoning%20Fast%20Food%20Outlets.pdf>

<sup>10</sup> "Panel OKs One-Year Ban on New Fast-Food Restaurants in South L.A." Los Angeles Times. Molly Hennessy-fiske. July 22, 2008. <http://articles.latimes.com/2008/jul/23/local/me-fastfood23>

<sup>11</sup> NYC Department of City Planning. Going to Market: New York City's Neighborhood Grocery Store and Supermarket Shortage; see [www.nyc.gov/html/dcp/pdf/supermarket\\_access/presentation\\_2008\\_10\\_29.pdf](http://www.nyc.gov/html/dcp/pdf/supermarket_access/presentation_2008_10_29.pdf)

organizations as well as city and state government with finding ways to keep supermarkets thriving in under-served neighborhoods.<sup>12</sup>

These valuable New York City initiatives are being implemented without a baseline awareness of the existing food environment that we are seeking to change. What is missing is a meaningful measurement of the retail food environment within and across the city's neighborhoods. Knowing this baseline is essential if the current wave of healthy food initiatives is to become a permanent part of New York's environmental and public health agenda.

## II. FOODSTAT

FoodStat is a new tool for policymakers and the public that holds the potential to improve New York City's approach to public health, city planning, and our urban environment.

Simply put, FoodStat measures the availability of healthy food choices in a neighborhood. The statistic is a ratio comparing unhealthy food options to healthy options; it is constructed by dividing a neighborhood's total number of fast food restaurants and bodegas by the total number of supermarkets, farmers markets and fruit stands.

$$\text{FOODSTAT} = \frac{\# \text{ of Bodegas} + \# \text{ of Fast Food Restaurants}}{\# \text{ of Supermarkets} + \# \text{ of Produce Vendors}}$$

The larger the FoodStat number, the worse the mix of retail food options in a community. For example, a community with a FoodStat of 3.0 has three times as many fast-food restaurants and bodegas as it does supermarkets and produce vendors. If your neighborhood has a very high FoodStat, that means that you will have a much easier time finding fast food on your neighborhood streets than you will finding fruits, vegetables, and other healthy food.

The Center for Public Health Advocacy in California introduced this measuring device two years ago to better understand its retail food environment and to target public policies to improve it. There, the ratio is called the Retail Food Environment Index, or "RFEI." California has calculated the RFEI for all sizeable counties and municipalities throughout the state.<sup>13</sup>

Before discussing the policy objectives served by adoption of FoodStat in neighborhoods throughout New York City, it is necessary to mention two caveats. First, FoodStat represents important facts about a neighborhood's food landscape and provides a

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<sup>12</sup> "Council Votes to Create New Permits for Green Vendors, Bringing More Fresh Produce to Underserved Communities." The Council of the City of New York: Office of Communications." February 27, 2008. [http://council.nyc.gov/html/releases/011\\_022708\\_prestated\\_greencarts.shtml](http://council.nyc.gov/html/releases/011_022708_prestated_greencarts.shtml)

<sup>13</sup> "Designed for Disease: The Link Between Local Food Environments and Obesity and Diabetes." California Center for Public Healthy Advocacy, PolicyLink, and the UCLA Center for Health Policy April 2008. <http://www.policylink.org/documents/DesignedforDisease.pdf>

meaningful basis for comparison across city neighborhoods, but the ratio does not pretend to capture all information relevant to a neighborhood's food environment and dietary concerns. For this reason, the Office of the Manhattan Borough President recommends that as FoodStat is discussed and further developed, options be explored for simultaneously providing companion information such as a grade for the amount of regionally grown food available in a neighborhood.

Second, the component parts of the FoodStat ratio must accurately reflect whether retail food outlets provide healthy options. Some bodegas pride themselves on selling fruits and vegetables; others do not. The FoodStat formula must account for the difference. One solution may be to divide bodegas into two categories, distinguishing these 'healthy bodegas' as the community asset that they may, in fact, be.

There are several policy objectives served by citywide adoption of neighborhood-by-neighborhood FoodStats. Most importantly, FoodStat will institutionalize consideration of the neighborhood food landscape in policies and programs developed by the City to improve public health and the urban environment.

Much like CompStat in the 1990s, by quantifying a well-known problem, the very existence of FoodStat will force activity to expand healthy food options in neighborhoods where such options are in shortest supply. The policy deliberations provoked by FoodStat will help to unify and rationalize the disparate efforts now underway aimed at improving the diets of city residents. And with comparative data available across neighborhoods, community awareness of the local food landscape will increase, as will the community engagement needed to improve the food environment.

### **III. MANHATTAN CASE STUDY: EAST HARLEM & THE UPPER EAST SIDE**

#### **The Study**

In East Harlem the percentage of residents who are obese (31 percent) is more than three times the percentage of obese residents in the adjoining Upper East Side neighborhood (9 percent).<sup>14</sup>

The Office of Manhattan Borough President Scott Stringer conducted a survey of the two neighborhoods to determine if the public health differences between them were matched by significant differences in the availability of healthy food options. By developing the FoodStat for each neighborhood, the study sought to test generally held assumptions about the two retail food environments against empirical data. The study also sought to quantify differences in the food environments of the two neighborhoods with the goal of better informing the city's existing and future healthy food initiatives.

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<sup>14</sup> Department of Health and Mental Hygiene. "Eating Well in Harlem: How Available is Healthy Food?" Eating Well in Harlem: How Available Is Healthy Food? A Report from the East and Central Harlem District Public Health Office, May 2007. <<http://www.nyc.gov/html/doh/downloads/pdf/dpho/dpho-harlem-report2007.pdf>>.

Canvassers from the Manhattan Borough President's Office surveyed almost seven hundred food retailers in these two neighborhoods. Ten teams of two surveyors canvassed the region over a four-day period during the third week in April. East Harlem was defined as the geographic region spanning from Fifth Avenue on the west, the north side of 96<sup>th</sup> street at the south, and Harlem River to the north. The boundaries of the Upper East Side are Central Park on the west, the north side of 59<sup>th</sup> Street, and the south side of 96<sup>th</sup> Street to the north.

The sample focused on commercial storefronts within five hundred feet of every public, private, and parochial schools in East Harlem and the Upper East Side. The decision to target schools was in response to the aforementioned study, which showed that the presence of a fast food chain within five hundred feet of a school could increase student obesity by more than five percent.<sup>15</sup> The densely populated nature of New York City may differentiate our schools from others in the United States, because they are surrounded by a myriad of food retailers.

Stores were categorized as a supermarket, bodega, restaurant, or 'other.' 'Other' includes retailers that exclusively sell produce, coffee, ice cream, chocolate or any other specialty item. Every restaurant was further examined to determine whether it was 'fast food,' defined as outlets with (1) no table service, (2) pre-prepared and re-heated food, and (3) payment tendered before receipt of food. Surveyors identified and removed all bakeries, coffee shops, and delis from the analysis. Starbucks, a well-known coffee chain, was an exception as it sells pre-made sandwiches and was, therefore, categorized as fast food.

## **Limitations**

This study has a number of limitations, which must be remedied before expanding Food Stat citywide.

First and foremost, FoodStat oversimplifies the business structure of food retailers. It assumes that *all* supermarkets sell healthy food, and *all* bodegas sell unhealthy food. The presence, quality, or cost of healthy food varies across retailers.

Furthermore, the RFEI, which is the model for FoodStat, identifies convenience stores as an unhealthy food outlet, making no mention of bodegas. Although similar, bodegas and convenience stores are not exact substitutes. Bodegas rely on a business model unique to the inner city - combining characteristics of a convenience store, grocery, and deli - and offer substantial benefits to a community. They are often owned independently, by immigrants, offer flexible hours of operation, and are located in convenient locations.<sup>16</sup> In addition, substantial efforts have been made by bodega owners, the Bodega Association of the United States, and the New York City Department of Health to improve the quality

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<sup>15</sup> Janet Currie, Stefano DellaVigna, Enrico Moretti, Vikram Pathania. American Association of Wine Economists. AAWE Working Paper No. 33 Economics. "The Effects of Fast Food Restaurants on Obesity." February 2009. [http://www.wine-economics.org/workingpapers/AAWE\\_WP33.pdf](http://www.wine-economics.org/workingpapers/AAWE_WP33.pdf)

<sup>16</sup> Department of Health and Mental Hygiene. "Eating Well in Harlem: How Available is Healthy Food?" Eating Well in Harlem: How Available Is Healthy Food? A Report from the East and Central Harlem District Public Health Office, May 2007. <<http://www.nyc.gov/html/doh/downloads/pdf/dpho/dpho-harlem-report2007.pdf>>.

of food sold in bodegas, particularly in low-income neighborhoods. Thus, the goal for good public policy should not be to limit the number of bodegas but to continue improving the amount and quality of health food served by them.

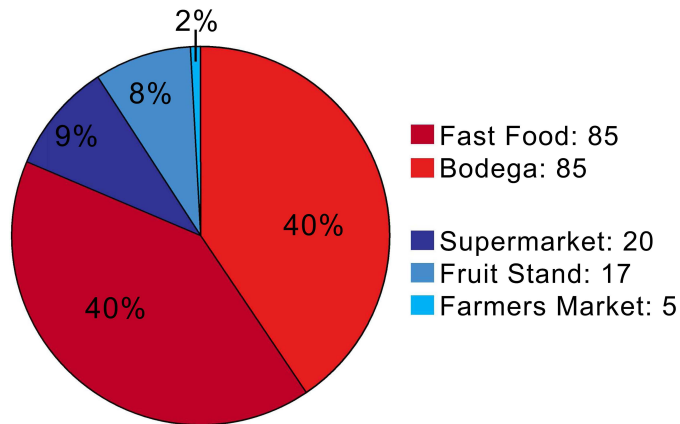
Lastly, the study assumes that stores are equally accessible through transportation or walking, because of the highly dense nature of Manhattan. This may not be the case, particularly in other boroughs.

These limitations must be modified before implementing FoodStat citywide.

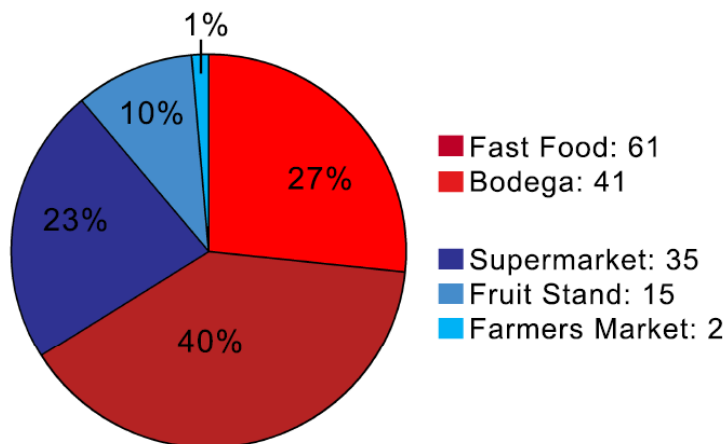
### Findings

The survey of East Harlem and the Upper East Side compares food retailers associated with selling ‘healthy’ and ‘unhealthy’ food. The FoodStat for East Harlem shows that there are twice as many unhealthy food retail options than in the Upper East Side:

#### East Harlem



#### Upper East Side



A closer examination of the fast food restaurants in these neighborhoods helps to illustrate the disparate food retail environments. The fast food restaurants in the Upper East Side, for instance, are more likely to be local or regionally owned delis, pizza joints, bakeries, or even upscale cafes with five or more outlets in New York City. The well-known, national chain restaurants in the Upper East Side include nine Starbucks, eight Subway Sandwich shops, six Dunkin Donuts, and one Taco Bell. However, the chain restaurants in East Harlem are classic examples of unhealthy fast food retailers:

**“Chain” Restaurants in East Harlem:**

<b>No.</b>	<b>Chain</b>	<b>No. of Outlets</b>
1	Blimpies	2
2	Burger King	2
3	Dominos Pizza	2
4	Dunkin Donuts	6
5	Famous Famiglia Pizza	1
6	Golden Krust	1
7	KFC	3
8	McDonalds	4
9	Papa John's	1
10	Seattle Café	1
11	Starbucks	1
12	Subway Sandwich Shop	6
13	Taco Bell	1
14	Taco Bell Express / Pizza Hut	1
15	Wendy's	1
	<b>TOTAL</b>	<b>35</b>

Having explored the retail food environment in East Harlem and the Upper East Side, it is important to revisit the implications on local residents’ health.

Twenty-two percent of adults in New York City are obese, compared to 31 percent of East Harlem residents and 9 percent of Upper East Side residents. The incidence of obesity contributes to the incidence of diabetes.<sup>17</sup> Nine percent of adults citywide have diabetes, compared to 13 percent of adults in East Harlem and 3 percent on the Upper East Side. East Harlem residents are predominantly Hispanic, Black / African-American, and 37 percent of the household income levels are below the poverty line, compared to predominately White and wealthy Upper East Side residents. This informal survey does not prove a causal relationship between an unhealthy retail food environment and local residents’ health, but the findings certainly support the body of scientific research that does so.<sup>18</sup>

<sup>17</sup> New York City Department of Health and Mental Hygiene. Community Health Profile: East Harlem. 2006: <http://www.nyc.gov/html/doh/downloads/pdf/data/2006chp-303.pdf>

<sup>18</sup> Department of Health and Mental Hygiene. “Eating Well in Harlem: How Available is Healthy Food?” Eating Well in Harlem: How Available Is Healthy Food? A Report from the East and Central Harlem District Public Health Office, May 2007. <<http://www.nyc.gov/html/doh/downloads/pdf/dpho/dpho-harlem-report2007.pdf>>.



## IV. RECOMMENDATIONS

1. Expand FoodStat to every neighborhood in New York City, incorporating the degree to which retailers provide healthy food options, particularly with bodegas, supermarkets, and fast food restaurants where there may be great variation between establishments.

2. Double the number of grocery stores, produce vendors, and the availability of fresh affordable produce by creating ‘food enterprise zones’ in neighborhoods with food deserts:

- Attract new food outlets by exploring the usage of land use and zoning incentives, such as floor area bonus for projects, which contribute to healthy food outlets.
- Dedicate public financing to community food partnerships and commit Industrial and Commercial Abatement Program (ICAP) funding to healthy food retailers, and exempt these retailers from business taxes.
- Make smart policy decisions about publicly-owned property including the addition of healthy food retailers. For example, if NYCHA is considering infill development on their properties, the Authority should review opportunities to include retail outlets for healthy food. The City should consider adopting a policy to investigate these options in every disposition of City-owned property.
- Explore revisions to the City and State Environmental Quality Review (CEQR and SEQ, respectively) standards that would require studying the potential impact that development proposals and other discretionary actions may have on the food system.

3. Impose a moratorium on new development of fast food chains within 500 feet of schools in food deserts.

4. Expand funding and commitment to the Healthy Bodegas Program, which improves nutritious food options, such as low-fat milk, whole grains, or fresh and frozen produce.<sup>19</sup>

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<sup>19</sup> For more information on the Healthy Bodegas initiative, see the NYC Department of Health and Mental Hygiene site: [http://www.nyc.gov/html/doh/html/cdp/cdp\\_pan\\_hbi.shtml](http://www.nyc.gov/html/doh/html/cdp/cdp_pan_hbi.shtml)