Indicators for a Healthy Food and Built Environment in the City of Buffalo

Where We Are and Where We Need To Go

ABOUT THIS TOOL

This set of indicators measures factors in the built and food environment that impact the ability of youth to eat well and live an active lifestyle. This tool provides 16 indicators to help gauge Buffalo's progress towards the goal of creating a healthier food and built environment for youth. Indicators are calculated using accessible methods based on data that is readily available to most stakeholders. Each indicator presented features a baseline number for Buffalo and a 5-year goal. Each measure also carries with it an explanation of its importance and sample visual representation. This collection of indicators was developed as result of four years of work by the Healthy Kids, Healthy Communities - Buffalo Partnership.

Now that we know where Buffalo stands, we can find strategies to move towards improvement. Strategies and best practices to address different areas of concern can be found in the Policy Brief entitled, "Planning to Eat? Innovative Local Government Plans and Policies to Build Healthy Food Systems in the United States." [1]

The Healthy Kids, Healthy Communities -Buffalo Partnership hopes that stakeholders will use these measures to help gauge Buffalo's progress as we together work to make the City of Buffalo a place where kids and adults can eat well and live active, healthy lives.

The Healthy Kids, Healthy Communities - Buffalo Partnership is an initiative of the Robert Wood Johnson Foundation. Partners include: Buffalo Niagara Medical Campus, Inc., Buffalo Public Schools, City of Buffalo Bicycle and Pedestrian Board, City of Buffalo Department of Public Works, City of Buffalo Office of Strategic Planning, Empire State Development NY, Erie County Department of Public Health, Grassroots Gardens of Buffalo, Green Options Buffalo, Massachusetts Avenue Project, University at Buffalo Food Systems Planning and Healthy Communities Lab, and the Wellness Institute of Greater Buffalo

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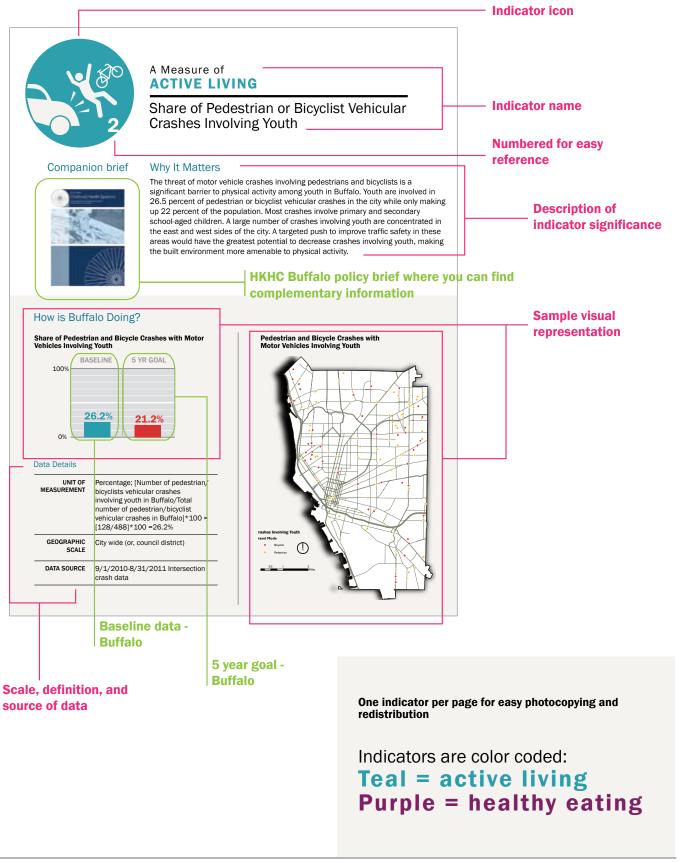
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HOW TO USE THIS TOOL

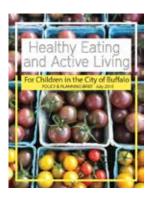




An Indicator of ACTIVE LIVING & HEALTHY EATING

Share of overweight and obese 9-12 grade students in public schools

Companion brief

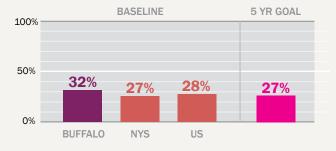


Why It Matters

Low levels of physical activity and limited healthy food options – both in school and out – contribute to high rates of obesity and overweight among Buffalo's youth. According to the Buffalo Public Schools Youth Risk Behavioral Survey conducted in 2011, 32 percent of 9-12 graders in Buffalo public schools were overweight or obese, compared to New York State's average of 27 percent high school students. Obesity can lead to many serious health problems later in life, such as high cholesterol, high blood pressure, heart attack, heart disease, stroke, asthma, and diabetes. Over the next five years we recommend that Buffalo strive to lower the rate of overweight and obesity among students equal to or lower than the state average (five percentage point decrease). This indicator also helps to measure progress on the US Department of Health and Human Services' *Healthy People 2020* goal of decreasing the proportion of children and adolescents who are considered obese (Goal NWS-10). [2]

How Buffalo Is Doing

Percentage of overweight and obese 9-12 grade students in the City of Buffalo compared to state and national rates



Data Details

DEFINITION	Percentage; [(Number of public high school students in Buffalo with BMI in the overweight and obese range based on self-reported height and weight/Total number of public high school students who answered the survey in Buffalo)*100]
GEOGRAPHIC SCALE	Citywide
DATA SOURCE	2011 Buffalo Public Schools High School Youth Risk Behavioral Survey (BPS HS YRBS)

Candy displayed in a convenience store from youth led assessment of food environment





Share of pedestrian or bicyclist vehicular crashes involving youth

Companion brief

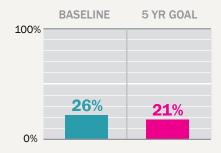


Why It Matters

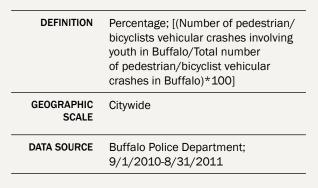
The threat of motor vehicle crashes involving pedestrians and bicyclists is a significant barrier to physical activity among youth in Buffalo. Youth are involved in 26.2 percent of pedestrian or bicyclist vehicular crashes in the city while only making up 22 percent of the population. Most crashes involve primary and secondary school-aged children. A large number of crashes involving youth are concentrated in the east and west sides of the city. A targeted push to improve traffic safety in these areas would have the greatest potential to decrease crashes involving youth, making the built environment more amenable to physical activity. Over the next five years, we recommend that Buffalo strive for a five percentage point decrease (21%) in the number of vehicle crashes involving youth pedestrians and bicyclists.

How Buffalo Is Doing

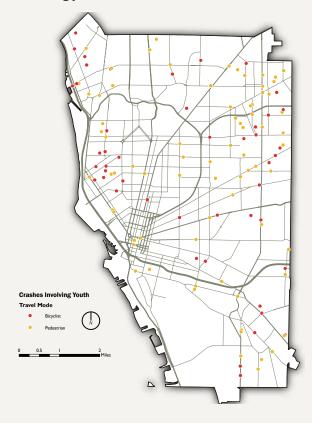
Percentage of pedestrian and bicycle crashes with motor vehicles involving youth



Data Details



Pedestrian and bicycle crashes with motor vehicles involving youth





Land use diversity

Companion brief



Why It Matters

Youth are more likely to walk or bike if neighborhoods offer a variety of youth-friendly spots and services. Though urbanized, the mix of land uses in Buffalo is relatively homogenous, and neighborhoods tend towards a single land use. To encourage youth to be physically active in their neighborhoods, the city must enable neighborhoods to diversify their land uses. Neighborhoods with a combination of parks, schools, commercial destinations, and residential uses can promote youth physical activity and can ensure a more vibrant community. We recommend that the City of Buffalo strive to increase its land use diversity score to 0.53.

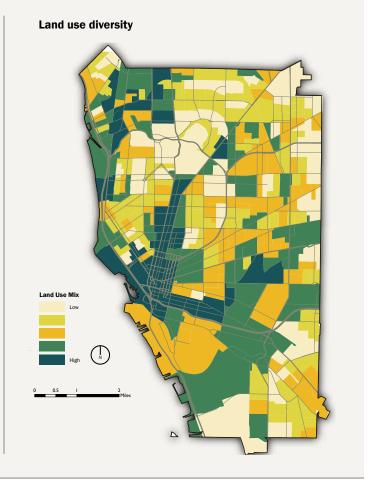
How Buffalo Is Doing

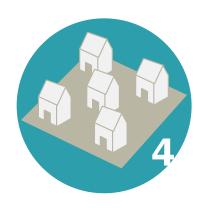
Land use diversity scale



Data Details

DEFINITION	Diversity scale ranges from 0 to 1; Score = 0 when all land is concentrated in a single land use (i.e., no land use diversity); Score = 1 when land is equally divided among all existing land uses in the city (i.e. high land use diversity)
GEOGRAPHIC SCALE	Citywide (aggregate of Buffalo neighborhoods)
DATA SOURCE	Erie County Parcel data; GIS data





Residential housing density

Companion brief



Why It Matters

Kids are more likely to walk and bike in neighborhoods with densely built environments. Today, the average Buffalo neighborhood has 18.9 housing units per acre of residential land, while the city as a whole has a net residential density of 17.06 housing units per acre of residential land. In 2009, the net residential density of the city as a whole was 20.09, which means that there are fewer housing units per acre of residential land today than there were in 2009. The impact of this change, which stems partly from the demolition of vacant residences, is that children are less likely to walk and bike. We recommend a modest increase in residential density from 17.06 to 20 residential housing units per acre.

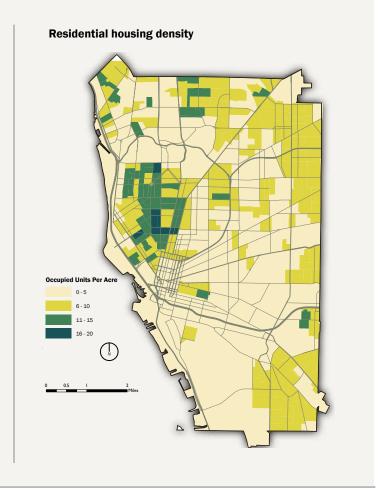
How Buffalo Is Doing

Number of occupied residential housing units (RHU) per acre of residential land in Buffalo



Data Details

DEFINITION	Density; [Number of occupied residential housing units (RHU)/Total acres of residential land in Buffalo]
GEOGRAPHIC SCALE	Citywide
DATA SOURCE	2010 US Census and Erie County Parcel data





Percentage of miles of bicycle lanes and sharrows

Companion brief

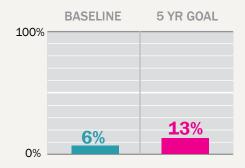


Why It Matters

Increased ability to commute on bike is one way to improve physical activity among Buffalo's youth. However, only 6% of Buffalo's streets are rated "suitable" for biking, while 114 miles are rated "caution advised" and 2 miles are rated "extreme caution advised." [3] Safety is an issue for young cyclists. From 2010 to 2011, children were involved in 48 bicycle crashes involving a vehicle. According to New York State Law only bikes with solid tires intended for pre-teens, such as a "big wheels", tricycles or certain training bikes, can ride on sidewalks (NYS Vehicle & Traffic Law, Article 102). City of Buffalo ordinance disallows biking on sidewalks entirely (413-2). However, for many children biking on the sidewalk presents the only safe option. Improving bicycle infrastructure can make biking safer for all of Buffalo's residents, including the children. We recommend a seven percentage point increase (to 13%) in the miles of bike lanes and sharrows.

How Buffalo Is Doing

Percentage of Buffalo roads with bicycle lanes and/or sharrows



Data Details

DEFINITION	Percentage; [(Miles of bike lanes and sharrows/Total mileage of streets in Buffalo)*100]
GEOGRAPHIC SCALE	Citywide
DATA SOURCE	GIS; City of Buffalo Comp Plan (section 1.6.2)

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Presence of urban trees

Companion brief

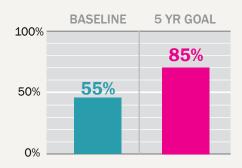


Why It Matters

Tree-lined streets are an important amenity for active commuting or leisure walking. Trees are often considered aesthetically pleasing and add visual interest to the environment. Trees provide shade and protection from inclement weather for pedestrians and public transit riders. Trees also help to clean air by absorbing pollutants and producing oxygen. According to the environmental group American Forests [4], one tree absorbs 10 pounds of air pollutants and produces enough oxygen to support two people per year. However, trees must be well kept and in good health in order to provide maximum benefit and minimize potential hazards like falling branches. One of Buffalo's many nicknames, "City of Trees", describes Buffalo's once abundant tree canopy. Many trees were lost during the "October Storm" in 2006. As a result, only 55% of all available tree spots along city roads are currently planted. We recommend an aggressive target of planting 85% of all available tree spots by 2018.

How Buffalo Is Doing

Percentage of trees planted in available street-tree spots



Data Details

DEFINITION	Percentage; [(Number of planted trees in available street-tree spots in Buffalo/Number of available street-tree spots in Buffalo)*100]
GEOGRAPHIC SCALE	Citywide
DATA SOURCE	GIS data; City of Buffalo Public Works

Children play in a shady spot during the Amherst Street Festival in Black Rock, Buffalo



Image Source: Cristina Delgado



Land vacancy rate

Companion brief

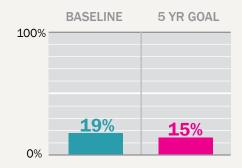


Why It Matters

Vacant lots (with or without structures) not currently being used for community purposes attract illicit activities such as illegal dumping or other more serious crimes. Children may also be attracted to vacant lots as play spaces when they lack closer play amenities. As a result, unkempt lots or abandoned buildings may pose a health hazard to children. Fear of crime or hazards, real or perceived, may discourage children's physical activity. Currently, 19% of residential parcels are vacant. A reduction in vacant parcels would help to lower risk to children and encourage physical activity in their neighborhoods. The City of Buffalo will have to invest in creative strategies for reincorporating currently vacant parcels into desirable uses. Some ideas which could increase opportunities for physical activity are to increase the number of community gardens, open space and athletic fields. We recommend a modest goal of a four percentage point decrease (to 15%) in vacant lots by 2018.

How Buffalo is Doing

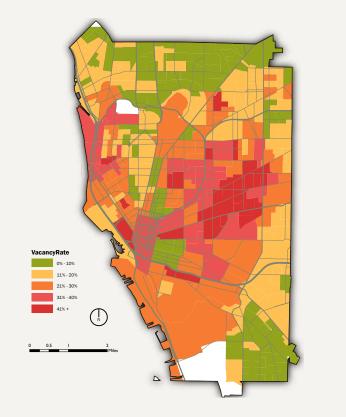
Percentage of vacant residential parcels in the City of Buffalo



Data Details

DEFINITION	Percentage; [(Vacant residential parcels/Total residential parcels (occupied + vacant) *100]
GEOGRAPHIC SCALE	Citywide
DATA SOURCE	2011 American Community Survey- US Census, Erie County Parcel Data GIS Data
NOTES	Vacant parcels are classified as NYS Land Class Code 300-399

Concentration of vacant residential parcels in the City of Buffalo





Percentage of census tracts with at least one acre of green space per 1000 people

Companion brief



Why It Matters

Youth are likely to be physically active in areas of open space, such as parks, playgrounds, parkways, nature trails, athletic fields, and recreation areas. Low youth physical activity levels could be due to limited access to safe, well-maintained green space in the city. Increasing the public recreation space per person, especially in proximity to those communities currently located further than 1/2 mile from green space, can provide the opportunity for youth physical activity. Currently, the City of Buffalo has an average of 8.35 acres of green space per 1000 people. However, this green space is not spread evenly throughout the city. Many census tracts have far less green space then the city-wide average. The city should strive to have a minimum of 1-2 acres of green space per 1000 people in each block group.

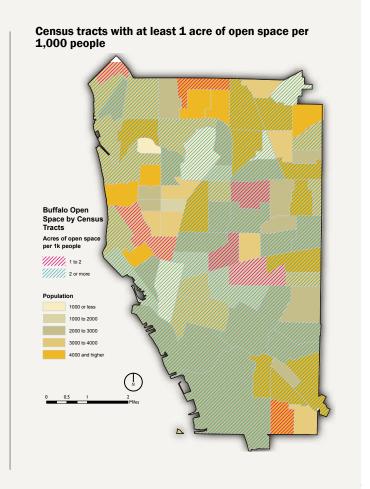
How Buffalo is Doing

Percentage of census tracts with at least 1-2 acres of open space



Data Details

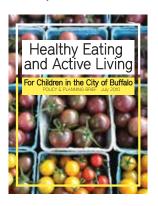
DEFINITION	Percentage; [((Sum # of Tracts with a rate of at least 1 acres of green space/Population*1000)/Total number of census tracts)*100]
GEOGRAPHIC SCALE	Citywide
DATA SOURCE	Erie County Parcel Data; 2010 US Census Data





Percentage of high school students who eat fruits and vegetables five or more than five times per day

Companion Brief

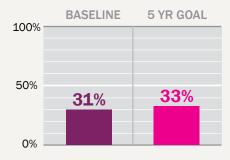


Why It Matters

Increasing the consumption of fruits and vegetables in the place of less healthful foods can help reduce the high rates of obesity and overweight among high school students and can promote healthy food decisions in the future. The consumption of fruits and vegetables among high school students in Buffalo is shockingly low. According to the Buffalo Public Schools 2011 Youth Risk Behavioral Survey, only 31 percent of high school students reported eating the required five servings of fruits and vegetables per day in the seven day period leading up to the survey. We recommend a modest increase of two percentage points (to 33%) in the rate of fruit and vegetable consumption among high school students. This indicator also helps to measure progress on the US Department of Health and Human Services' *Healthy People 2020* goal of increasing the variety and contribution of fruits vegetables in the diets of youth (Goal NWS-14 & 15). [2]

How Buffalo is Doing

Percentage of high school students who ate fruits and vegetables five or more than five times per day during the seven days before the survey



Data Details

DEFINITION	Percentage; [(Number of 9-12 grade students who ate vegetables more than five times per day/Number of 9-12 grade student respondents)*100]
GEOGRAPHIC SCALE	Citywide
DATA SOURCE	2011 Buffalo HS YRBS (Variable in Buffalo YRBS is "ate fruits and vegetables less than five times per day during the 7 days before the survey" - inverted here; 100%-69.5%=30.5%)

Fruits and vegetables on display at a small store in Buffalo, NY



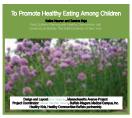
Source: Food Systems Planning and Healthy Communities Lab



Percentage of renter-occupied homes that are located within a five minute walk of a community garden

Companion Brief

Strengthening Buffalo's Food System

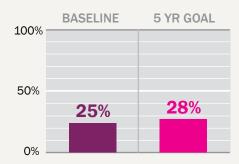


Why It Matters

In Buffalo, households living in rental houses have lower access to healthy food than owner-occupied households. Renters have low vehicle ownership rates (less than 40% of households in a census block) and are poorer than those living in owner-occupied homes. Low vehicle ownership may make accessing healthy food retail destinations difficult. Renters also have less access to land for growing their own food. In addition, most children, who disproportionately face food insecurity in the city, live in rental units. Providing access to community gardens can offer opportunities for residents to increase access to healthy food by growing their own healthful foods. Community gardens can also promote community investment which may increase the likely hood that the neighborhood appear attractive to investors - including healthy food retail destinations. Currently, only 25% of renter occupied homes are within a five minute walk (.25 miles) of a community garden. We recommend a modest three percentage point increase to 28% by 2018.

How Buffalo is Doing

Average percentage of renter occupied housing within five minute walk (.25 mile) of a community garden



Data Details

DEFINITION

Percentage; [(Percentage of renter occupied homes in a block group within a .25 mile distance of a community gardens/Number of rental units in that block group)*100]

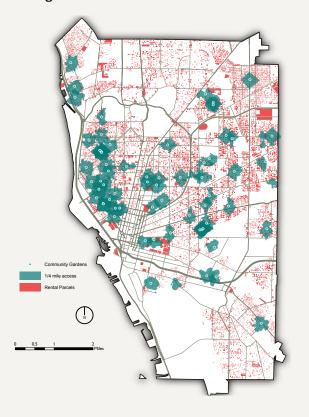
GEOGRAPHIC SCALE

Citywide

DATA SOURCE

2012 Grassroots Gardens of Buffalo Garden Inventory and Erie County Parcel Data for Buffalo, NY; Note: Reliable data was not available for urban farms, future evaluations should incorporate active urban farms

Location of community gardens in relationship to rental housing





Number of active community gardens per 1000 households

Companion Brief

Strengthening Buffalo's Food System

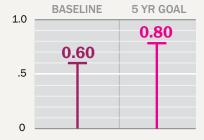


Why It Matters

Community gardens are spaces where community groups gather to participate in gardening and social activities. Community gardens can increase access to fresh fruits and vegetables, but community gardens also provide a host of other health benefits. Gardens have been recognized as providing therapeutic benefits to both gardeners and patrons. Gardens also provide active social spaces that allow gardeners to engage in physical activity and create connections with their neighbors which has been linked to an increase in a sense of wellbeing and neighborhood attachment. Additionally, community gardens have been associated with increased ability to organize and advocate for community needs. [5] Increased access to community gardens could provide multiple benefits to communities while also addressing the need to reduce the number of vacant and underused lots in the City of Buffalo. Currently, community garden rates are negligible at 0.6 gardens per 1000 residents. We recommend a modest increase in this rate to 0.80.

How Buffalo Is Doing

Actively sponsored gardens per 1,000 households



Data Details

DEFINITION	Rate; [(Number of land parcels in active community gardening use/Number of Buffalo households)*1000]
GEOGRAPHIC SCALE	Citywide
DATA SOURCE	2012 Grassroots Gardens of Buffalo Garden Inventory and Erie County Parcel Data for Buffalo, NY

Black Rock Heritage Garden, Black Rock neighborhood, Buffalo, NY (2012)



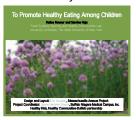
Source: Cristina Delgado



Percentage of Buffalo neighborhoods with low access to a vehicle and within a five minute walk from the healthy food retail*

Companion Brief

Strengthening Buffalo's Food System

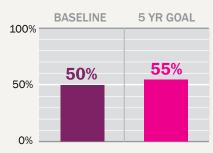


Why It Matters

Most neighborhoods in Buffalo lack healthy food stores within walking distance. A number of neighborhoods have both low vehicle ownership rates (less than 40% of households in a census block) and limited walking access to healthy food. Often the most viable sources of food in these neighborhoods are restaurants or convenience stores, which have limited healthy food options. [6] Increasing healthy food access for communities with low vehicle ownership whose residents must currently walk more than five minutes (.25 miles) to reach healthy food retail can promote healthier food shopping choices and can build local economies. Currently, 50% of census block groups have low vehicle access (more than 40% of households in a census block without access to a motor-vehicle) but are located within a five minute walk of a healthy retail destination. We recommend that the City of Buffalo strive to increase this average to 55% by 2018. This indicator also helps to measure progress on the US Department of Health and Human Services' *Healthy People 2020* goal of increasing the proportion of people who have access to a food retail outlet that sells a variety of foods that are encouraged by "Dietary Guidelines for Americans" (Goal NWS-4). [2]

How Buffalo Is Doing

Average percentage of households with low vehicular access per block group within five minute (.25 mile) walk of a healthy food retail destination



Data Details

DEFINITION

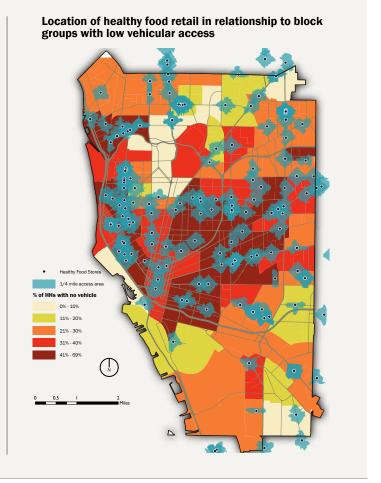
Percentage; [(Number of census blocks with low vehicular access (more than 40% of households without access to a motor-vehicle) and within a .25 mile walk from healthy retail/Total number of census blocks in the City of Buffalo)*100]

GEOGRAPHIC SCALE

Citywide

DATA SOURCE Reference USA; US Census 2010

NOTES *Supermarkets and grocery stores

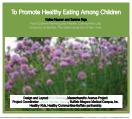




Neighborhoods with low vehicular access and within a five minute walk from the nearest farmers' market

Companion Brief



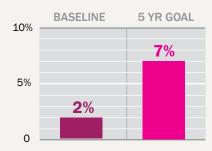


Why It Matters

Buffalo residents have limited opportunities for direct purchase of food from farmers. In order to sell their goods, farmers must use intermediaries, such as grocery stores which may not be accessible to residents with low-vehicle access. Farmers' markets provide many benefits to farmers and consumers. For farmers, farmers' markets are a low-cost entry into retail markets. They also offer the possibility to diversify what they grow as they tailor their selection to meet local product demands. Farmers who participate in food assistance programs such as SNAP also benefit from increased sales. For consumers, farmers' markets offer fresh, local, and seasonal produce in a social space. Farmers' markets may also carry foods not traditionally carried in grocery stores. Strengthening the distribution sector such that it reconnects local and regional farmers and consumers which has the potential to further promote economic development and increase availability of healthful produce within the City of Buffalo. [6] Currently, only 2% of census blocks with low-vehicle access (more than 40% of households in a census block without access to a motor-vehicle) are within a five minute walk of a farmer's market. We recommend a five percentage point increase by 2018.

How Buffalo Is Doing

Percentage of neighborhoods with low vehicular access and within a five minute walk (.25 Miles) from the nearest farmers' market



Data Details

DEFINITION

Percentage; [(Number of census blocks with low vehicular access more than 40% of households in a census block without access to a motor-vehicle - and located within .25 miles or 5 minute walk of a farmto-consumer purchase point/Total number of census blocks in the City of Buffalo)*100]

GEOGRAPHIC SCALE

Citywide

DATA SOURCE

NY State Department of Agriculture; US Census 2010

Residents at the Bidwell Farmers' Market





Percentage of Buffalo neighborhoods with a high percentage of children and located within a five minute walk from the nearest healthy food retail*

Companion Brief

Strengthening Buffalo's Food System

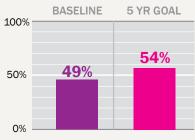


Why It Matters

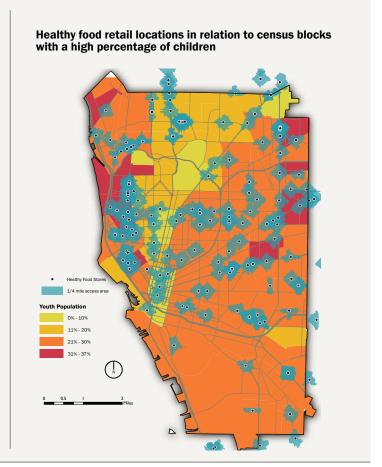
A significant proportion of households with children under the age of 18 experience food insecurity. Improved access to healthy food can help improve fruit and vegetable consumption among youth and reduce rates of overweight and obesity. Increasing the number of destinations within walking distance can also increase physical activity levels among children by promoting walking and biking. [7] Currently, 49% of census blocks with households that have high youth population have walking access to a healthy food retail destination. We suggest a five percentage point increase (54%). This indicator also helps to measure progress on the US Department of Health and Human Services' Healthy People 2020 goal of increasing the proportion of people who have access to a food retail outlet that sells a variety of foods that are encouraged by "Dietary Guidelines for Americans" (Goal NWS-4). [2]

How Buffalo Is Doing

Average percentage of census blocks with high percentage of children located within a five minute walk (.25 Miles) of a healthy retail destination



Data Details	
DEFINITION	Percentage; [(Number of census blocks with high percentage of children and located within .25 miles or a 5 minute walk from healthy food retail/Number of census blocks in the City of Buffalo)*100]
GEOGRAPHIC SCALE	Citywide
DATA SOURCE	Reference USA; US Census 2010
NOTES	*Supermarkets and grocery stores





Percentage of schools with gardens

Companion Brief



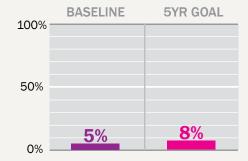


Why It Matters

School-based community gardens can offer students the opportunity to actively engage in community improvement while increasing the availability of healthy and fresh food, developing an appreciation for food production, and increasing physical activity. [5] School gardens in Buffalo integrate educational programming about nutrition with environmental awareness. For example, City Honors High School recently turned four vacant lots into a large school garden/outdoor classroom called the Pelion Garden where students learn about sustainability, community engagement and food. Including gardening in both in-school and after school activities can help reverse the trend of low fruit and vegetable consumption in school aged youth as well as offer other educational benefits. Currently there are only five school gardens out of a total of 99 public and private schools. In other words, only 5% of schools have gardens. We recommend a modest increase in this percentage to 8%.

How Buffalo Is Doing

Percentage of school gardens in the City of Buffalo



Data Details

DEFINITION	Percentage; [(No. of school gardens/ Total # Public + Private schools)*100]
GEOGRAPHIC SCALE	Citywide
DATA SOURCE	2012 Grassroots Gardens of Buffalo garden inventory; Erie County Parcel Data

Girard Place Community Garden with King Center Charter School Kindergarten



Source: Grassroots Gardens of Buffalo



Percentage of school students in proximity to healthy food retail*

Companion Brief



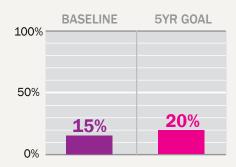


Why It Matters

Children can obtain food from retail stores located in the vicinity of their schools. The type of food destinations available in the vicinity of a school can enable or constrain children's choices to purchase healthful or unhealthful snacks. In Buffalo, the food environment surrounding schools is a cause for concern. Only a small percentage (15%) of Buffalo Public Schools students (while at school) are within close proximity to any healthy food retail stores. We recommend a five percentage point increase (to 20%) by 2018. This indicator also helps to measure progress on the US Department of Health and Human Services' *Healthy People 2020* goal of increasing the proportion of people who have access to a food retail outlet that sells a variety of foods that are encouraged by "Dietary Guidelines for Americans" (Goal NWS-4). [2]

How Buffalo Is Doing

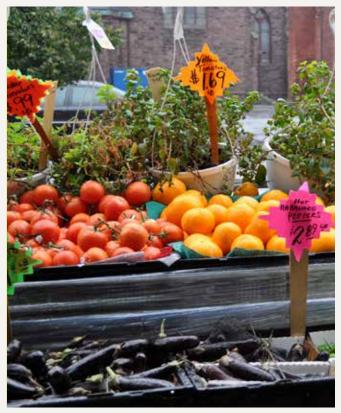
Percentage of Buffalo Public Schools children studying in schools located in proximity to healthy food retail



Data Details

DEFINITION	Percentage; [(Number of Buffalo school children studying in schools located in proximity to healthy food retail/Total number of Buffalo school children)*1000
GEOGRAPHIC SCALE	Citywide
DATA SOURCE	Reference USA; Buffaloschools.org
NOTES	*Supermarkets and grocery stores

Produce on sale outside of a local healthy food retail store in Buffalo, $\ensuremath{\mathsf{NY}}$



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