

**HOW
OUR
GARDENS**

Grow

**STRATEGIES
FOR
EXPANDING
URBAN
AGRICULTURE**



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**MANHATTAN
BOROUGH
PRESIDENT**

EXECUTIVE SUMMARY

Think of farming and agriculture and you are unlikely to visualize the Manhattan skyline. Yet thriving in the back lots, on the rooftops, and in the community centers and the schoolrooms of this dense urban environment are more than 170 community gardens plus a vast array of food-producing hydroponics labs, greenhouses, and urban farms.

The benefits of urban farming and agriculture are many and well documented: residents gain a local source of fresh fruits and vegetables, healthier eating habits, and educational opportunities in science, technology, engineering, and math (STEM) fields. Urban gardening is also good for the community, the economy, and the environment.

The Manhattan Borough President's Office (MBPO) is committed to supporting food-producing gardens and promoting new ideas for urban farming that can be shared across New York City. To learn more about food-producing gardening at Manhattan's public schools and community centers—the best practices that have allowed these programs to thrive and the challenges that may be limiting their efficacy and development—we undertook a survey of urban farming sites at schools and community centers across Manhattan and compiled our findings into this report.

The primary challenge in Manhattan is the intertwined issues of limited space and expensive land, but we also discovered that lack of funding to pursue alternative garden sites, lack of personnel resources, and lack of school time create obstacles that prevent more innovative gardens from sprouting up.

Our recommendations for sustaining and boosting urban agricultural programs include increasing city government support, integrating gardening into school curricula and community center programs, reducing garden startup and maintenance costs, creating an urban agriculture network, establishing a citywide training program, and extending school gardening programs in the summer.


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Manhattan Borough President

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Manhattan's increasing investment in urban agriculture

Recent efforts to cultivate fruits, vegetables, and flowers in community gardens have put more green into Manhattan's concrete jungle. If you count community gardens alone, the five boroughs have 600, according to GreenThumb, the NYC Parks Department program that assists and coordinates licensing agreements with the city's community gardens. Manhattan has 170 of these gardens—plots of uncovered, outdoor land used for gardening flowers, trees, vegetables, herbs, etc.—with the highest concentration on the Lower East Side, where around 46 can be found.

But community gardens are only part of the story of Manhattan's native-grown food. Greenhouses, hydroponics labs, and other types of out-of-ground gardening—for instance, rooftop planter boxes—have been taking off in recent years. At least 69 public schools, 12 senior centers, and 13 New York City Housing Authority (NYCHA) community centers in Manhattan have an urban agriculture program. Throughout the borough, individuals and groups are using innovative farming methods to establish gardens on the smallest outdoor plots, on rooftops, and in water-based programs inside buildings. Their creative techniques are meeting local needs with minimal demand on resources.

The evolution of community gardening

In the 1970s, almost all of Manhattan's community gardens were vacant lots—both existing public land and land acquired by foreclosure that no one but gardening pioneers wanted. Hard as it is to believe, Manhattan's first community garden was leased from the city's Office of Housing Preservation and Development (HPD) for a dollar a month in 1974. Located on the corner of Bowery and Houston,^[1] the garden is named after Liz Christy, the green pioneer who helped conceive the idea and negotiate the HPD lease—and who eventually founded the Green Guerrillas to advocate for the expansion of community gardens and farms throughout the city.

The Lower East Side holds an important place in the city's history of community gardening, primarily because it, like East Harlem and Hell's Kitchen, was where the vacant lots existed—and where you found the Puerto Rican New Yorkers and immigrant communities who grew to rely on these new gardens as a source of fresh food.

Another early voice in Manhattan gardening—GrowNYC—was launched in 1970 to advocate for a clean and healthy environment for city residents.^[2] Since then the non-profit has flourished and supports dozens of greenmarkets and community gardens throughout the city. One of our survey respondents from Robert F. Wagner Middle School in the Upper East Side cited GrowNYC staff as “instrumental” to supplementing the schools' curricula with “knowledgeable experts on gardening and healthy eating.” Many others echoed the importance of GrowNYC to the city's burgeoning urban farming initiatives.

The city also did its part to support these efforts by launching the GreenThumb program in 1978. The Parks Department recognized that community-tilled gardens add greenery to cities, reduce harmful runoff, increase shading, and counter the “heat island effect,” whereby impermeable and dry urban surfaces like concrete and asphalt can cause urban areas to be heated during the summer to temperatures 50 to 90 degrees hotter than the air.

By the 1990s, however, the city began to face pressure from real estate developers to turn the sites occupied by many of the city's gardens into commercial and residential buildings. Ironically, it was often the community gardens themselves that made the

city's land more valuable and worth developing. Fortunately, urban agriculture advocates partnered with city and state officials to protect the city's gardens and farms and ensure their continued survival.

In 1999, the New York Restoration Project (NYRP), a group founded by the singer Bette Midler, partnered with the Trust for Public Land to purchase 100 community garden and farming sites around the city for \$4.2 million to ensure that these sites would continue to operate as gardens and farms. NYRP continues to support the city's community gardens and farms, including 10 sites in Manhattan.^[3] Many of these same advocacy organizations worked to broker a 2002 deal with the city to preserve an additional 400 garden sites across the city.^[4]

The vertical alternative and hydroponics

The preservation of community gardens is crucial given that Manhattan is never going back to the days of unwanted lots leasable for a dollar, but gardening advocates have long been pursuing alternatives to land-based gardens. Aside from the prohibitive cost, plots of land have other farming drawbacks: urban soils can be loaded with lead, arsenic, and other toxins, requiring remediation or replacement before planting can be done safely, and cramped conditions can limit yields, with lack of water and sunlight major concerns.

The private sector has long been on the vanguard of space-conscious innovation. Vertical gardens began in 1988 as an experiment by Patrick Blanc, a French botanist-artist who pioneered these modern, soil-free hydroponic alternatives that have flourished on the walls of private homes, hotels, and museums the world over. Both indoor and outdoor gardens based on this design consist of a water source at the top and a dirtless surface that absorbs the water, providing a place for the plants to grow and turning anything from chain-link fences and drab brick walls into lush gardens.^[5]

Rooftop container gardens have also proliferated, especially at top hotel restaurants: the Crosby Street Hotel, the Waldorf-Astoria, the Conrad New York, Westin New York Grand Central, and the InterContinental New York Barclay Hotel all harvest their own produce from rooftop gardens. Six years ago, John Mooney, chef at the West Village's Bell, Book & Candle, created the city's first rooftop "aeroponic" garden to supply fresh produce for his restaurant.^[6]

In 2010, GrowNYC and the Mayor's Fund to Advance New York City launched a new public-private partnership, Grow to Learn, a citywide school gardens initiative that aims to build and support school gardens and agricultural programs.^[7] In just four years, over 400 schools—69 of them in Manhattan^[8]—have registered gardens with Grow to Learn.

Schools have proved ideal laboratories for testing alternative gardening methods, especially hydroponics labs—sites that use a method of growing plants without soil, most often in nutrient-rich water—and greenhouses—glass or plastic structures used for plant-growing that allow for greater control over temperature, light, and humidity.

Urban agriculture experts have long predicted that soaring vertical farms will eventually produce most of what New Yorkers need within a short walk from home. With the right combination of technology and city and community support, the MBPO believes we can make that happen in our public spaces sooner rather than later.

The case for urban farming

With over 80% of the American population living in metropolitan centers, urban farming stands to dramatically increase food quality, improve residents' health, and enhance economic growth. Providing more green space and communal safe space for residents is an obvious benefit of community gardens that has been shown to help communities express, affirm, and preserve their culture.^[9] Given Manhattan's scarcity of land for traditional gardening, this benefit may not top our list, but there are still many other well-documented benefits that planter-based, greenhouse, and hydroponics gardens share with community gardens.

Improved food quality and health

Studies have shown that nutrition, exercise, and mental and physical health are all augmented with urban farms—sites that grow fruits, vegetables, or herbs or raise animals in an urban setting. Many have found that urban agricultural programs help increase the consumption of healthy foods.

Members of the Community Food Security Coalition's North American Initiative on Urban Agriculture found that the more involved people are in growing food, the more likely they are to eat it.^[10] Another study found that this benefit extends to children—those who are exposed to a gardening program in school curricula consume greater quantities of fruit and vegetables than those who are not.^[11] Yet another study found this associated increase in healthy eating habits even extended to family members of those that participate in gardening programs.^[12]

The act of gardening is also great exercise that improves physical health, reducing risk of obesity, heart disease, and diabetes.^[13] Research has additionally shown that the act of cultivation has significant impact on the mental health of participants—assisting with social skills, self-esteem improvement, and stress reduction—and that this benefit holds true across gender and age groups.^[14]

Stronger communities

Gardening is often a communal activity, providing a social space for individuals to come together for a common purpose. Several studies point to increased social ties in communities that support community gardens, particularly among seniors.^[15]

According to Adam James of the Center for American Progress, "The social organization required for most urban farming projects can forge stronger community bonds by creating 'stakeholder interactions' that give individuals a sense of responsibility and productivity. By harnessing two sources of capital—social capital and the existing built environment—urban farming uses the inherent strengths of cities to solve some of their most serious problems."^[16]

Another shared benefit from participation in urban farming is increased practical knowledge of food, including dietary knowledge and practice,^[17] that often begins at school and is brought home by children to their families.

Manhattan's Project FIND operates three supportive residences housing about 600 New Yorkers and four senior centers with over 3,000 members. In 2014, under the leadership of Executive Director David Gillcrisp, Project FIND established a 2,000-square-foot Rooftop Farm, located at Hargrave House, a senior housing building at 111 West 71st Street. The first seedlings are planted in indoor hydroponic grow tables in April and after germination are transferred to more than a dozen hydroponic bays on the rooftop. From May to November, a range of vegetables—including lettuces, herbs, tomatoes, and a variety of squash—flourish and are harvested weekly.

Hargrave residents and members of the nearby Hamilton Senior Center select, plant, and care for the garden in conjunction with Project FIND's fantastic Food for Thought cooking class and a gardening club led by Rusk Institute horticulturalist Gwenn Fried. This rooftop farm produce is incorporated into a new eco-salad bar as part of the senior meals program.

Each step in the cycle from "farm to table"—growing, harvesting, understanding seasonality, maintaining the hydroponic bays, cooking the harvested food—improves dietary habits and promotes an active lifestyle. An allegiance to homegrown (and by extension locally produced) food continues to develop for Project FIND seniors as they acquire and share the skills to transform fresh, raw food into cooked, flavorful meals.

Education opportunities

In schools with gardening programs, several studies have found academic benefits for students, including an increased interest in STEM subjects, improved academic performance, and social skill development.^[18]

We learned from our survey that many Manhattan schools have taken considerable strides toward integrating urban farming programs into curricula:

🌱 PS 208M in Central Harlem has a teacher dedicated to a three-month farming and gardening curriculum for third- through fifth-graders. Students learn how to seed and grow a plant through a hydroponic system and about the growth and harvesting processes; the course concludes with lessons in nutrition. The school hopes to eventually incorporate lessons on urban farming entrepreneurship, teaching students the business side of running a farm.

🌱 At MS 328 in Washington Heights, students are required to care for plants as part of their homework. They learn how to care for a plant during class and then spend the winter tending to a plotted plant at home. Come spring, they return their plants to school and learn how to plant them in the school garden.

Manhattan's Food and Finance High School

exemplifies an innovative partnership between a public school and an institute of higher education—in this case Cornell University. The school is home to an aquaculture system developed by Cornell scientist Philson Warner, and a lab within the school is used to raise more than 10,000 tilapia and other types of fish.

Food and Finance also houses a hydroponics lab that grows nine types of lettuce, cabbage, and herbs. In a rooftop greenhouse, the school is also developing a lab for aquaponics, which combines aquaculture and hydroponics technology to create a self-sustaining system in which nutrient-water from the fish helps to grow the plants, while the plants clean the fish's water.

The Cornell/Food and Finance partnership provides a unique educational opportunity for students. Hydroponics has become part of the school's core science curriculum, with labs that meet the New York City Department of Education's science requirements. Labs are located in both the ninth- and tenth-grade science classrooms.

Students also have the opportunity to work up to eight hours each week as interns in the aquaculture and hydroponics labs, which exposes them to state-of-the-art technology. The fish and vegetables produced onsite are used in the school's culinary arts program and are also served in the cafeteria, providing students with a healthy and fresh menu. The school additionally sells its food output to the broader community and donates portions to food rescue programs such as food banks, demonstrating both the entrepreneurial and philanthropic potential of such programs.

🌱 MS 328 also recruits eighth-graders to help teach sixth-graders how to garden. A teacher there reported that “whenever students have the opportunity to learn about something hands-on they are more excited to get involved with what they are learning. This has been the effect on the students' attitude about science.”

🌱 Stuyvesant High School in Lower Manhattan has created an Environmental Club that meets before and after school and at free periods during the day to help tend the school's garden.

Environmental and economic incentives

Increasingly, food is traveling long distances from farmers to consumers. By growing what people need near where they live, urban agriculture programs decrease the “food miles” associated with fossil fuel use and greenhouse gas emissions.^[19]

What we heard from urban farmers

To understand how urban agriculture is working in Manhattan and to learn what can help it expand and improve, we reached out to public schools, senior centers, and NYCHA community centers with known food-producing gardens and farms, hydroponics labs, and greenhouses. We found that the size and scope of the projects correlate with community benefits: some are able to extend their benefits to a broad part of the community, while others are more limited in their capacity. We also found common challenges: lack of funding to pursue alternative garden sites, lack of personnel resources, and lack of school time to maintain gardens.

Survey population and design

The MBPO created a survey to distribute to Manhattan schools, senior centers, and NYCHA community centers. Information from Grow to Learn NYC and NY Sun Works told us which Manhattan schools had gardens; the NYC Department for the Aging (DFTA) and NYCHA provided information on senior centers and community centers with access to a garden.

We designed our survey to gather information on (1) food items grown as part of the agriculture program, (2) the program's origins, and (3) the challenges involved with setting up and maintaining the program, with content tailored to the type of institution. The surveys were completed either by our staff via site visits or electronically by the gardening site; our 57 respondents included sites at 46 schools and 11 senior centers or NYCHA community centers.

Garden history, formats, and crops

Despite Manhattan's decades-long history of urban agriculture, most of the gardens we surveyed were started recently—58% within the past five years. In fact, 26% had been started within the past year. At the other end of the spectrum, 16% of respondents had been operating their urban agriculture site for 10 years or more. Our survey includes several schools and community centers that had previously run a garden or farm but scaled back the projects considerably or eliminated them entirely for reasons we will discuss.

We learned that the primary purpose of most of these programs is educational. Thirty-seven percent of school respondents claimed the primary purpose of the school's gardening program was to provide a hands-on learning opportunity within STEM fields. Promoting health and wellness was a close second: 35% of school respondents and 27% of NYCHA and senior community centers stated this purpose. We generally found that the production of food is secondary to educational and health purposes: only 15% of school respondents and 9% of NYCHA and senior center respondents cited food production as their primary purpose.

Features of school gardening programs varied widely: 24% have a hydroponic system located either in a classroom or on a rooftop, 20% have a rooftop greenhouse, and the rest (roughly 56%) have either traditional outdoor gardens or planter boxes. Around half of respondents claimed to use some sort of composting system as part of the program.

Forty-seven of the sites surveyed grow vegetables as the primary output. Most grow a variety of vegetables, such as tomatoes, cucumbers, green beans, carrots, and lettuce. Forty-one sites also grow flowers, while 18 grow a variety of fruits. Twelve respondents also grow such herbs as basil, mint, rosemary, and sage; 12 also raised and maintained some sort of live animal or insect, such as chickens, fish, or butterflies.

Challenges to sustainability and expansion

Funding. Nearly all respondents cited a lack of adequate resources as the primary challenge to operating an urban agriculture program. Many of the school gardens received an initial grant to help offset startup costs but have struggled to find funding to maintain or expand the program. PS 146 in East Harlem used to have a garden that grew vegetables and flowers, for instance, but it was forced to close after funding from a private grant expired.

Respondents cited a range of projects they would like to operationalize if they had adequate funding. Many of the schools are interested in expanding their gardens and diversifying their crops in order to provide more and different types of fresh food in cafeterias; others would like funding for additional gardening tools. A respondent at PS 964 on the Upper East Side, for instance, claimed that the school would “love to grow vegetables and herbs to incorporate into classrooms and cafeteria” but lacks the funds needed to do so.

Some schools have bigger projects in mind, such as greenhouses or rooftop gardens. Although these larger-scale projects would require more funding, they would also help address other gardening objectives, such as providing additional space, growing more varieties of crops and increasing yield, and controlling pests and rodents.

Currently, nearly half of the school garden programs receive at least some of their funding through private grants, while only 7% of NYCHA and senior centers do. Thirty-one percent of schools provide funding through the school budget or the Parent-Teacher Associations. Only 20% of schools and 17% of NYCHA and senior centers obtain funding for their garden programs from city government sources.

Personnel. Many of the programs were started by a motivated teacher, parent, or other member of the community with a passion for gardening and sustainability. At PS 50 in East Harlem, a special education teacher took the initiative to secure funding and approval for a variety of green initiatives. He helped build raised gardening beds in the courtyard and start a hydroponics lab, a school farmer’s market, and a botanical library. He also secured annual funding for these programs, ensured proper supervision by staff and volunteers, and integrated urban agriculture into the school’s curricula.

Without such a person, however, it is often hard to get going: 59% of respondents claimed it was hard or somewhat hard to find qualified instructors to help oversee their existing program. Some of these programs have floundered after the person who helped establish the garden left, while others took steps to ensure gardening programs had the necessary long-term support. A respondent at PS 146 in East Harlem, for instance, noted that although the administrators of their school garden “are trying to learn more,” they still lack a sophisticated knowledge of maintaining an urban garden and could use someone with more experience to help manage the program.

Schools that have not had difficulty recruiting qualified instructors cited various methods, including reaching out to nonprofits or parents with

The Randall’s Island Park Alliance maintains an urban farm on Randall’s Island. Originally developed from a small plot of land, the farm has grown to over an acre that is now devoted to growing dozens of varieties of fruit, vegetables, herbs, and grains—and it has started raising chickens.

The Alliance’s innovative strategies for involving community members in its urban agriculture program include free tours for schools and any other interested group. In striving to find cost-efficient production methods, the Alliance has begun using old milk crates as receptacles for small gardens. Staff line the crates with fabric and dirt to plant their crops—an innovative system that could be easily replicated in schools or community centers at minimal cost.

The Alliance is also experimenting with techniques they hope will serve as a model for other urban agricultural programs—for instance, they just installed solar panels that help power the mechanical system that turns the compost pile.

experience in urban agriculture. Other programs have received funding that allowed for the hiring of dedicated, qualified staff to oversee programs.

Time. Many of the schools have had difficulty finding adequate time for students to participate in school garden programs: 53% claimed it was hard or somewhat hard to find time for students to participate in urban agriculture programs on campus. Those that have not had difficulty have integrated urban agriculture into their STEM classes: 47% have made gardening a required curricular component for at least some grade levels. This is a model we hope other schools will follow.

Space. Forty-five percent of respondents claimed it was somewhat hard or hard to find space for starting and maintaining their gardening program. Many schools have targeted underutilized space—rooftops, outdoor space, or a small room—to build gardens, greenhouses, and hydroponics labs.

According to a respondent at PS 1 in Lower Manhattan, for instance, the school originally was looking to secure space on the rooftop to build a garden but quickly learned that the project would be prohibitively expensive. So instead the school “has allocated space in the yard for the garden, which has proven to be sufficient.”

Installing a rooftop greenhouse is a substantial investment, but a hydroponics lab or a small raised-bed garden can be constructed at a much lower cost and can be housed in a classroom or other underutilized space. Rooftop greenhouses may also pose a structural challenge to a building and trigger compliance issues with the Americans with Disability Act, particularly in school buildings without current access, meaning that an even larger investment of funds could be required.

Recommendations

The increase in all varieties of gardens, farms, and hydroponics labs in Manhattan over the past five years indicates a clear institutional interest in urban agriculture. While many of the sites we surveyed are flourishing, others need better ideas to maintain and operate successful programs. From our interviews and analysis, the MBPO has identified several best practices and policy suggestions to improve and expand these programs so that more Manhattan residents can enjoy their benefits.

Increase city government support for urban agriculture

Given the clear benefits of urban agriculture and the high level of interest in these programs, the City of New York should support and partner with such programs to help sustain and expand them. The city needs to (1) identify and help secure additional funding for urban farming programs in schools, seniors centers, and NYCHA facilities and (2) identify available and underutilized land that can be earmarked for community gardens and farms.

As one source of funding, local elected officials could allocate a certain portion of their discretionary funds to helping support existing urban farming programs and begin new ones. The MBPO has committed a total of \$1 million in the coming fiscal year to help expand and establish new urban farming programs at schools. Projects such as hydroponics labs can be cheaper and require less infrastructure changes than more common types of gardens. We will conduct an outreach campaign to schools and science teachers interested in beginning or expanding an urban farming program. Details of this application and selection process will be announced in fall of 2015.

The city’s participatory budgeting (PB) process is another potential source of funding.

This year, New Yorkers in 25 council districts will decide how to spend \$25 million in discretionary capital funds. The MBPO, along with other elected leaders and city officials, can help educate schools and community centers on the PB process and encourage them to submit proposals to develop an urban farm program.

On April 22, the de Blasio administration released “One New York: The Plan for a Strong and Just City”—or OneNYC—as a blueprint toward creating a more sustainable and equitable city over the next decade. The administration should be commended for including urban agriculture as a prominent piece of OneNYC. The plan includes several urban farming goals—such as working to increase the number of schools and NYCHA developments that have access to gardens and offering young people jobs within the urban farming sector. The administration should ensure that adequate resources are dedicated to these commendable goals.

Integrate gardening into school curricula and community center programs

The schools and community centers that reported the highest level of engagement and benefit from urban farms and gardens were those that had fully integrated their gardens into their curricula and programming. For schools that already have garden programs, the NYC Department of Education (DOE) should partner with urban farming advocates to develop grade-level STEM curricula that integrate the output, specification, and other maintenance and growth data that student gardeners collect at that growing site. For schools looking to begin a garden, implementation of these STEM curricula should accompany the physical garden program. The MBPO will work with the DOE to identify nonprofit partners and administrators of current urban farming programs to help develop grade-level STEM curricula.

Track information on urban gardens

Little information about the city’s farming initiatives—such as community gardens, urban farms, and hydroponic labs—is currently available to the public. The City Council and the Mayor should therefore pass legislation that would require city agencies to release all collected data on these programs. These data could be included as part of the Mayor’s Management Report (MMR), which is mandated by the city charter to provide the public with comprehensive information on city services. While the current MMR provides detailed information on many city services, such as housing and education, it does not include any information on the city’s urban farming programs.

Create an Urban Agriculture Network

Despite the challenges, many schools and community centers have found ways for their programs to thrive. We need to create a formal network of staff members, experts, and volunteers who share best practices on urban gardens, farms, greenhouses, and hydroponics labs throughout Manhattan. As noted in a sidebar to this report, the Randall’s Park Alliance has demonstrated one innovative method for growing fruits, vegetables, herbs, and grains using old milk crates as planters. Such a method, though less technologically advanced, can nonetheless provide many of the same health and education benefits as higher tech programs.

To help encourage the formation of a network of urban farming practitioners and enthusiasts, the MBPO, in partnership with Cornell University Cooperative Extension, will be hosting an Urban Farming Symposium in the fall of 2015. Experts in the field, science teachers, environmental advocates, and others interested in developing urban farming programs will discuss best practices and brainstorm methods for supporting and expanding farming in Manhattan.

Establish a citywide training program

Many respondents claimed that it was difficult to find personnel knowledgeable enough to effectively oversee urban agricultural programs. But resources do exist throughout Manhattan to help find and train teachers and volunteers to oversee gardens and urban farms. For example, the nonprofit NY Sun Works is dedicated to building science labs, including greenhouses and hydroponics programs, in schools. It also runs a program to train teachers how to set up and operate agricultural programs. Their sessions started last summer and have been approved by the DOE's After School Professional Development Program.

Through the sharing of best practices from schools and community centers with effective programs, the city should develop a standard training program for teachers and for community members to ensure that they have the proper skills to oversee urban agricultural programs. This training would be delivered by volunteer teachers and community members at the garden sites.

Extend school gardening programs into the summer

Many urban agriculture sites are not operating at full capacity, especially when school is out of session. Both students and the broader community could continue to benefit from these programs in the summer months. Schools with urban agriculture programs need to partner with volunteer staff, nonprofits, or educational institutions to allow their gardening programs to operate throughout the year whenever possible.

The garden at PS 102 in East Harlem, for example, operates year-round thanks to a unique partnership with Concrete Safaris, a nonprofit dedicated to providing youth with an education in health and environmental studies. During the school year, PS 102 students have access to the garden for educational opportunities. During the summer months, Concrete Safaris continues to operate several youth programs out of the garden. Operating the garden year-round in this way helps to increase yield, which reached over 5,000 pounds last year. Much of this produce feeds PS 102 students, but it also feeds the neighboring community, such as residents of nearby Jefferson Houses. The city should work to encourage similar collaborations between nonprofits and urban farming programs to increase the benefit of these programs.

Next steps

Regardless of the identified challenges, our respondents generally reported a positive experience with their agriculture programs: gardens provide learning opportunities and expose New Yorkers to new plants and gardening techniques; they help provide a source of quality, locally grown food; and they help participants become more familiar with and willing to eat healthy foods.

Given the clear benefits of urban gardens, farms, and hydroponics labs, the Manhattan Borough President's Office will strive to ensure that every Manhattan school has access to an urban gardening program.

ENDNOTES

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URBAN AGRICULTURE SITES IN MANHATTAN

This list is not comprehensive. If you are aware of a community garden or urban agriculture site not on this list, please send the name and address to info@manhattanbp.nyc.gov.

PUBLIC SCHOOLS

Alain L. Locke Magnet School for Environmental Leadership
21 West 111th Street

Bread and Roses High School
Edgecombe Avenue

Central Park East 1 Elementary
1573 Madison Ave

City As High School
16 Clarkson Street

Columbia Secondary School for Math, Science, and Engineering
425 West 123rd Street

East Side Community High School
420 East 12th Street

Edward A. Reynolds West Side High School
140 West 102nd Street

Frederick Douglass Academy I
2581 Adam Clayton Powell Jr Blvd

H.S. 418 Millenium
75 Broad Street

H.S. Law & Public Service
549 Audubon Avenue

H.S. The Urban Assembly for Green Careers
145 West 84th Street

Harbor Heights Middle School
306 Fort Washington Avenue

Harlem Renaissance High School
22 East 128th Street

IS 52, 650 Academy Street

LaGuardia Arts High School
100 Amsterdam Avenue

Midtown West (PS 212)
328 West 48th Street

MS 131 Dr. Sun Yat Sen Middle Sch.
100 Hester Street

MS 167, 220 East 76th Street

MS 245, The Computer School
100 West 77th Street

MS 328, 401 West 164th Street

MS 839, Tompkins Square Middle School, 600 East 6th Street

Murray Hill Academy
111 East 33rd Street

NEST+m, 111 Columbia Street

PS/MS 276
55 Battery Place

PS/MS 278, 421 West 219th St.

PS/MS 34, 730 East 12th Street

PS 1, 8 Henry Street

PS 102, 315 East 113th Street

PS 11, 320 West 21st Street

PS 110, 285 Delancey Street

PS 126, 80 Catherine Street

PS 146, 421 East 106th Street

PS 15, 333 East 4th Street

PS 150 Tribeca Learning Center
334 Greenwich Street

PS 153 Adam Clayton Powell Jr
1750 Amsterdam Avenue

PS 163, 163 West 97th Street

PS 166, 132 West 89th Street

PS 175 Henry High Garnet
175 West 134th Street

PS 189, 2580 Amsterdam Avenue

PS 199, 270 West 70th Street

PS 3 John Melser Charrette School
490 Hudson Street

PS 30, 144-176 East 128th Street

PS 314 Muscota/Amistad
4862 Broadway

PS 333, 154 West 93rd Street

PS 347, 225 East 23rd Street

PS 363 The Neighborhood School
121 East 3rd Street

PS 364 The Earth School
600 East 6th Street

PS 368 Hamilton Heights
1750 Amsterdam Avenue

PS 37, 508 East 120th Street

PS 48, 4360-4378 Broadway

PS 51 Elias Howe
525 West 44th Street

PS 6, 45 East 81st Street

PS 63, 121 East 3rd Street

PS 72, 131 East 104th Street

PS 79, 55 East 120th Street

PS 84, 32 West 92nd Street

PS 89 Liberty School
201 Warren Street

PS 94 The Spectrum School
442 East Houston Street

PS 964, 19 East 103rd Street

PS/IS 180 Hugo Newman College
Prep, 370 West 120th Street

PS/IS 217
645 Main Street, Roosevelt Island

PS/IS 50, 433 East 100th Street

PS/MS 165 The Robert E. Simon
School, 234 West 109th Street

PS/MS 18
4124 9th Avenue

PS/MS 210 Twenty First Century
Academy for Community Leaders
503 West 152nd Street

School of the Future
127 East 22nd Street

Stuyvesant High School
345 Chambers Street

The Hunter College Campus
Schools, 71 E 94th Street

Urban Assembly New York
Harbor School, 550 Short Avenue,
Governors Island

SENIOR CENTERS

BRC Neighborhood Senior Center
30 Delancey Street

Find Hamilton Neighborhood
Senior Center
141 West 73rd Street

Gaylord White Neighborhood
Senior Center
2029 Second Avenue

Goddard Riverside Neighborhood
Senior Center, 593 Columbus Ave

Good Companions Neighborhood
Senior Center, 334 Madison Street

Hudson Guild Neighborhood
Senior Center, 119 Ninth Avenue

Independence Plaza Neighborhood
Senior Center, 310 Greenwich St

Jefferson Houses Neighborhood
Senior Center, 2205 First Avenue

Risa Neighborhood Senior Center
546 Main Street

Stanley Isaacs Neighborhood
Senior Center, 415 East 93rd Street

The Center at the Red Oak
Neighborhood Senior Center
135 West 106th Street

YM & YWHA Innovative Senior
Center, 54 Nagle Avenue

NYCHA CENTERS

Campos Plaza Community Center
611 East 13th Street

Chelsea/Elliott Community
Center, 441 West 26th Street

Clinton Community Center
120 East 110th Street

Corsi Community Center
307 E 116th Street

Drew Hamilton Community
Center, 220 West 143rd Street

East River Community Center
404 E 105th Street

Grant Community Center
1301 Amsterdam Avenue

Harlem River Community Center
2627 7th Avenue

Holmes/Isaacs Community
Center, 1792 First Avenue

Manhattanville Community
Center, 530 West 133rd Street

Seward Park Extension
Community Center, 56 Essex St

Smith Community Center
50 Madison Street

Washington Community Center
1775 Third Avenue

COMMUNITY GARDENS

First Street Garden
48 East 1st Street

FishBridge Park
338 - 340 Pearl Street

Five Star Block Association
250-252 West 121st Street

Forsyth Garden Conservancy
Delancey at Forsyth

Fountain of Living Waters
Minister Church
1816-1822 Madison Avenue

Frank White Memorial Garden
506-508 West 143rd Street

Friendly Garden
95 East 111th Street

Garden Beautiful/West 153rd
Street Harlemites
263-265 West 153rd Street

Garden of Love
302 West 116th Street

Generation X Cultural Garden
270 East 4th Street

George Washington Carver
Community "Garden for Living"
1445 Madison Avenue

Green Oasis
370-386 East 8th Street

Harlem Success Garden - PS 175/
IS 275, 116 - 122 W. 134th St

Harlem Valley Garden
197 West 134th Street

Harlem Village Green
53-55 West 129th Street

Henry Rivera Children's Garden
142 West 127th Street

Herb Garden, 176 East 111th Street

Hope Community's Modesto "Tin"
Flores Garden, Lexington Ave

Hope Garden, 193 East 2nd Street

Hope Steven Garden
1656 Amsterdam Avenue

Humacao Community Garden
335 East 108th Street

IS 90 "Miracle Sisters Garden"
21 Jumel Place

Isabella Geriatric Center Garden
515 Audubon Avenue

Jackie Robinson, 105 E 122nd St.

Jane Street Garden, 36 Jane St.

Jirasol Association, 83 E 110th St.

Joseph Daniel Wilson Memorial
Garden, 219 West 122nd Street

Juan Alonzo Community Garden
722 11th Avenue

KenKeleba House Garden
214 East 2nd Street

La Casita Community Garden
223 East 119th Street

La Casita Community Garden
223 East 119th Street

La Cueva Community Garden
71 East 115th Street

La Perla Garden, 76 West 105th

La Plaza Cultural, 9th St & Ave C

LaGuardia Corner Community
Gardens, 511 LaGuardia Place

Le Petit Versailles, 247 E 2nd St

Liberty Community Garden
225 Rector Place

Life Spire/CRMD, Inc.
2015 Lexington Avenue

Little Blue House
1675 Madison Avenue

Liz Christy Garden
110 East Houston Street

Los Amigos (II), 221 East 3rd St.

Los Amigos Community Garden
326 Pleasant Avenue

Louis D. Brandeis High School/
New Dome, 501 Amsterdam Ave.

Lower East Side Ecology Center
Garden, 213-215 East 7th Street

Lower East Side People Care
Garden, 25 Rutgers Street

Lucille McClarey Garden
499 West 150th Street

MS 131, 100 Hester Street

MS 54 "Booker T. Washington
Garden," 103 West 108th Street

Maggie's Garden 564 W. 149th St.

Maggie's Magic Garden
1574 Lexington Avenue

Magic Garden, 1665 Park Avenue

Magical Garden, 595 FDR Drive

Margrichantie Memorial Garden
155-159 West 133rd Street

Marian S. Heiskell Garden
315 West 48th Street

Martin Luther King Jr.
Community Park
Montgomery & Henry streets

M'finda Kalunga Garden
30 Delancy Street

Mini Barrio Gardeners
1887 Lexington Avenue

Miracle Garden, 194-196 E 3rd St.

Mission Garden
1691-93 Madison Avenue

Mo' Pals, 545 West 147th Street

Mobilization for Change
Community Garden
955 Columbus Avenue

Morris Jumel Community Garden
455-457 West 162nd Street

Neighbors of Vega Baja
East 109th Street

New 123rd St. Block Association
112,114 & 116 West 123rd Street

New Chance Garden
203,205 West 119th Street

Nueva Esperanza Jardin Garden
2-6 East 110th Street

Oasis Community Garden
505 West 52nd Street

Open Road Park, 404-16 E 12th St.

Orchard Alley, 350 East 4th St.

Our Little Green Acres
275-277 West 122nd Street

PS 11, 320 West 21st Street

PS 125M Ralph Bunche School
425 West 123rd Street

PS 134 Children's Garden
293 East Broadway

PS 196 The Island School
N/S East Houston Street 821 ft.
W/O FDR Drive

PS 51, 520 West 45th Street

PS/IS 217 - Roosevelt Island
School, 645 Main Street

Papo's Garden
234 East 119th Street

Parque de Tranquilidad
314-318 East 4th Street

Peace Place Park
223-231 East 124th Street

Peaceful Valley Community
Garden, 1781 Madison Avenue

Peach Tree Garden
236-238 East 2nd Street

Penny Harvest Garden
515 West 182nd Street

Perla Del Sur Grupo Ponceno
169 East 111th Street

Pleasant Village Community
Garden, 342-353 Pleasant Avenue

PS 76 Garden, 203 West 120th St.

Pueblo Unido, 1659 Madison Ave.

Randall's Island Urban Farm
Icahn Stadium, 20 Randall's
Island

Relaxation Garden, 209 Avenue B

Rev. Lynette C. Williamson
Memorial Park, 65 W 128th Street

RING - Riverside Inwood
Neighborhood Garden
1835 Riverside Drive

Riverside Valley Community
Garden, Riverside Park/138th
Street & 12th Avenue

Rodale Pleasant Park Community
Garden, 437-39 East 114th Street

Sam & Sadie Koenig Garden
239 East Seventh Street

Sanidad Del Cielo
1881-83 Lexington Avenue

Secret Garden
293-297 East 4th Street

Senior Citizens Sculpture Garden
West 153rd Street

Serenity Gardens, 522 W 146th St.

Sheridan Square Viewing Garden
Triangle at West 4th Street,
Barrow & Washington Place

Siempre Verde Garden
181 Stanton Street

St. Nicholas Miracle Garden
330 St. Nicholas Avenue

Suffolk Street Community Garden
174 Suffolk Street

Sugar Hill Park
149th Street and Edgecomb Ave.

Target East Harlem Community
Garden, 415 East 117th Street

The Creative Little Garden
530 East 6th Street

The Harlem Rose Garden
4-6-8 East 129th Street

The Herb Garden, 176 E 111th St.

The Home Depot Community
Garden, 421 E. 117th Street

The Walter Miller III Memorial
Garden, 13 West 119th Street

Toyota Children's Learning
Garden, 603 East 11 Street

TRUCE community garden
215 West 117th Street

United Block Association Garden
50-54 East 131st Street

Unity Park, 53-55 West 128th St.

Vamos Sembrar: For the Beloved
and Otherwise Forgotten
198 Avenue B

Villa Santurce Jardinera
74 East 112th Street

Washington Market Park
Community Garden
Greenwich Street

West 104th Street Garden
6-10 West 104th Street

West 111th Street People's Garden
1036-53 Amsterdam Avenue

West 113th Street PlayGarden
510 West 113th Street

West 132nd Street Garden
108-114 West 132nd Street

West 181st Street Beautification
Project, 814 West 181st Street

West 181st Street Beautification
Project, W 181 Street at Pinehurst
Avenue-north side

West 87th Street Park & Garden
55-57 West 87th Street

West Side Community Garden
Midblock West 89th & 90th Streets

William A. Harris Garden
153rd Street & St. Nicholas Avenue

William B. Washington
Memorial Garden
321-325 West 126th Street

Young Devils Community Garden
1753 Madison Avenue



Gale A. Brewer

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