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## A Growing City: Hydroponic Farming in Buffalo

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## A Growing City: Hydroponic Farming in Buffalo

### Abstract

The City of Buffalo is in need of revitalization. Vacant lots, a declining economy, widespread poverty, and a lack of employment opportunities are just a few of the issues that the City needs to address. The City should consider implementing innovative policies, such as investing in and operating a hydroponic urban farm. Hydroponic farming is highly productive and requires a fraction of the resources of traditional farming. Although hydroponic farms are expensive to get started, they are ideal for urban areas because they can operate successfully on as little or as much land as is available. The City could also take advantage of State, Federal and private funding to help mitigate some of the startup costs. A hydroponic farm would be a creative reuse for Buffalo's many vacant lots and brownfields, as hydroponic farming does not require soil.

### Keywords

Buffalo, Environment, Food, Report, Other, PDF

# **A Growing City**

Hydroponic Farming in Buffalo

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Green Cities  
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## **Executive Summary**

The City of Buffalo is in need of revitalization. Vacant lots, a declining economy, widespread poverty, and a lack of employment opportunities are just a few of the issues that the City needs to address. The City should consider implementing innovative policies, such as investing in and operating a hydroponic urban farm.

Hydroponic farming is highly productive and requires a fraction of the resources of traditional farming. Although hydroponic farms are expensive to get started, they are ideal for urban areas because they can operate successfully on as little or as much land as is available. The City could also take advantage of State, Federal and private funding to help mitigate some of the startup costs. A hydroponic farm would be a creative reuse for Buffalo's many vacant lots and brownfields, as hydroponic farming does not require soil.

Hydroponic plants grow significantly faster than those grown in soil. The City could capitalize on this increased productivity to raise revenues. Locating the farm in downtown Buffalo would provide residents with locally grown produce, and the elimination of transportation costs would ensure that it was affordable for the lowest income City residents. By operating the farm itself, the City would be entitled to all sale revenues from the produce.

A City-run hydroponic farm would also spark the local economy by offering employment opportunities. Access to affordable produce will improve residents' health over the long term, which will benefit the city and county because government employees in Erie County are entitled to lifetime health benefits. Investing in and operating a hydroponic farm will also make Buffalo a model for other cities considering green policies and will attract people to the area. The countless benefits of an urban hydroponic farm make it an appealing and desirable policy option for the City of Buffalo.

## Hydroponics and Urban Farming



Urban farming is a growing phenomenon throughout the country. More and more cities and citizens are recognizing the important role that urban farms play in community development, economic growth, and environmental sustainability. The City of Buffalo should invest in and administrate a downtown hydroponic farm because doing so would improve the health of both the local economy and the population. A hydroponic farm would create jobs, promote local commerce, and increase revenue to the City through the sale of the produce. There would also be longer term benefits for the City. Residents would have readier access to healthier foods, and the elimination of transportation costs would make produce more affordable for lower income Buffalonians. Also, improving the City's eating habits would promote personal health and lower health care costs in the long term.

While there are successful urban farms in many American cities, Greensgrow farms in Philadelphia is perhaps the best example of an urban *hydroponic* farm.<sup>1</sup> In this city with an

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<sup>1</sup> <http://www.greengrow.org/>.

estimated 31,000 vacant lots, Greensgrow farms is a local, for-profit urban farm located in North Philadelphia.<sup>2</sup> The farm rents the land from a Community Development Corporation, and they have “an extensive hydroponic system to grow gourmet lettuces.”<sup>3</sup> Greensgrow is the premier urban farm in the United States, and “what was at one time a trash-strewn Brownfield is now a vibrant, active center of the community where entrepreneurship and sustainability thrive.”<sup>4</sup> The farm has hired three welfare-to-work participants and is developing a job training program.<sup>5</sup> Greensgrow sells its produce to local restaurants and also maintains a farm stand.

In Boston, Re-Vision House’s urban farm provides fresh produce to shelter residents and low income families in the neighborhood, recognizing that “the prohibitive cost of fresh produce leaves many families with no choice but to purchase inexpensive and nutritionally inadequate food.”<sup>6</sup> Located in downtown Boston, this urban farm began in 1993 on a quarter-acre abandoned lot.<sup>7</sup> In 1998, the farm purchased an additional half-acre of land, converting what was once a lot with four run-down houses “riddled with drugs, violence and crime” into a prosperous urban farm.<sup>8</sup> Re-Vision House Farm raises Tilapia and grows hydroponic herbs, micro-salad mix, and houseplants.<sup>9</sup>

Buffalo itself once had an urban hydroponic farm. In 1998, Village Farms Inc. opened an 18-acre hydroponic greenhouse at the old Republic Steel site.<sup>10</sup> The company’s decision to locate a branch of their hydroponic tomato business in Buffalo was largely influenced by

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<sup>2</sup> Kaufman, Jerry and Martin Bailkey, “Farming Inside Cities”, Land Lines, January 2001, Volume 13, Number 1.

<sup>3</sup> Id.

<sup>4</sup> <http://www.greensgrow.org/>.

<sup>5</sup> Kaufman, supra.

<sup>6</sup> Re-Vision House Urban Farm, [http://www.vpi.org/urban\\_farm.html](http://www.vpi.org/urban_farm.html).

<sup>7</sup> Id.

<sup>8</sup> Id.

<sup>9</sup> Id.

<sup>10</sup> Lloyd, Brenda, “Time Was Ripe for Village Farms Opening”, Supermarket News, September 1998.

incentives from the City of Buffalo, the State of New York, and local utility companies.<sup>11</sup>

Village Farms is a private corporation operating a for-profit business, and though some of the tomatoes grown at their Buffalo site there were sold at local grocery stores, most were shipped elsewhere in the country. The Farm closed in 2003, apparently due to its unprofitability.<sup>12</sup>

According to the Buffalo Niagara Enterprise, Village Farms has moved all of their operations to Texas, in part because locating facilities in places with year-round mild temperatures helps mitigate the high cost of heating greenhouses.<sup>13</sup> The Village Farms greenhouses have since been dismantled, and the land currently sits vacant. Studying the Village Farms experience in more detail, however, may provide the City with important lessons in how to run a successful hydroponic farm.

### **Hydroponic Farming is Ideal for Urban Areas**



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<sup>11</sup> Hope Wahl Associates, “the Feasibility of Urban Agriculture with Recommendations for Philadelphia”, The Pennsylvania Horticulture Society, *Urban Impact*, 2000.

<sup>12</sup> Kearns, Michael, Councilmember, City of Buffalo Common Council, Telephone Interview, Nov. 29, 2007.

<sup>13</sup> Buffalo Niagara Enterprise, “Agriculture-Dependent Economic Development for Western New York State”, Oct. 25, 2006, pp. 96-97, 101.

Hydroponics, a type of farming that doesn't require soil, has been used in the United States since the 1930s.<sup>14</sup> Because soil is unnecessary, hydroponic farms can produce “premium quality produce using a minimum of space, water and fertilizer.”<sup>15</sup> The most commonly grown vegetables are tomatoes, bell peppers, cucumbers, and lettuces. Other crops conducive to hydroponics are strawberries, radishes, green beans, carrots, spinach, and herbs such as basil.<sup>16</sup> The flexibility of growing produce hydroponically allows food production in areas where traditional farming is not viable, and is ideal for cities because the size of the greenhouse can vary depending on the amount of space available. Indeed, hydroponic urban farming is successful even where there is no land, such as on the Science Barge pictured above.<sup>17</sup> Growing produce indoors in a controlled environment makes it less susceptible to contamination, vandalization, disease, and bug infestation. Hydroponic plants also grow 30-50 percent faster than plants grown in soil.<sup>18</sup> This high productivity in a small amount of space makes hydroponics the ideal medium for urban farming.

The technical requirements for hydroponic farming vary with the size of the system. Most of the farms in the US are small and range from 1/8-1 acre.<sup>19</sup> The largest hydroponic farm in the United States, and indeed the world, is Eurofresh farms in Wilcox, Arizona.<sup>20</sup> That farm uses 256 acres to produce over 100 million pounds of tomatoes.<sup>21</sup> Even in a much smaller greenhouse, however, productivity is still high. A 12,000 square foot commercial greenhouse

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<sup>14</sup> Beatty, Thomas, “Hydroponics”, 2002, <http://www.nas.nasa.gov/About/Education/SpaceSettlement/teacher/lessons/contributed/thomas/hydroponics/hydroponics.html>.

<sup>15</sup> Nelson/Pade Multimedia and Consulting, <http://www.aquaponics.com/InfoHydroponics.htm>.

<sup>16</sup> Lesson 6-5, [www.hydroponicsonline.com](http://www.hydroponicsonline.com)

<sup>17</sup> The Science Barge, created by a New York City not-for-profit, is powered by biofuels, wind, and solar energy. Produce is irrigated by rainwater and purified river water. *See*, [http://nysunworks.org/science\\_barge/about\\_the\\_barge.html](http://nysunworks.org/science_barge/about_the_barge.html).

<sup>18</sup> Greentrees Hydroponics, *supra*.

<sup>19</sup> Nelson/Pade, *supra*.

<sup>20</sup> Wikipedia, <http://en.wikipedia.org/wiki/Hydroponics> (citing Kenney, Brad P, “Success under glass”, *American Vegetable Grower*, May 2006, pages 12-13).

<sup>21</sup> Eurofresh Farms, <http://www.eurofresh.com/aboutus/aboutus.shtml>.

will produce 4,000-5,000 tomatoes each week.<sup>22</sup> Growing produce hydroponically, therefore, can be profitable whether in a small or large greenhouse.

Hydroponic farming requires a greenhouse, lighting, water, nutrient solution, and a growing medium.<sup>23</sup> The size and dimensions of the greenhouse will vary with the amount of land available. Likewise, the price will vary with the size and style. Greenhouse kits can range anywhere from \$5,000 to \$20,000.<sup>24</sup> Straw bale construction provides a lower cost option for greenhouse building. While construction costs themselves can vary in a way similar to building with traditional materials, building with straw bales reduces the energy costs and environmental impacts of greenhouse farming.<sup>25</sup> Straw bales trap and retain heat better than traditional building materials, making them an extremely efficient way to control the environment. A controlled environment is critical for hydroponic farming because the temperature must be maintained and the nutrient solution must be protected from contamination.

Inside the greenhouse, a somewhat costly and technical lighting system is required to maximize the plants' ability to grow. There are, however, environmentally friendly LED lights available for hydroponic farming.<sup>26</sup> LED lights use less energy than traditional bulbs, and therefore offset the costs of lighting. Using solar energy, which is renewable and efficient, would further diminish lighting costs over the long run.

It is often assumed that a hydroponic farm requires an excessive amount of water. In reality, hydroponic farms use about 1/10 the amount of water of traditional farming because the water is recirculated throughout the system, and none is absorbed by soil.<sup>27</sup> Also, water is not

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<sup>22</sup> Nelson/Pade, supra.

<sup>23</sup> Greentrees Hydroponics, supra.

<sup>24</sup> International Greenhouse Company, <http://www.greenhousemegastore.com/products.asp?dept=1019>.

<sup>25</sup> Straw Bale Building, <http://www.strawbalehouse.com/strawbale.html>.

<sup>26</sup> See, <http://www.hydroponicsfarming.com/>.

<sup>27</sup> Nelson/Pade, supra.

wasted by running off of saturated soil. Hydroponic farming requires nutrients for the plant roots. The nutrients are relatively inexpensive, and because they are recirculated throughout the system, are reusable.<sup>28</sup> Unlike soil, which absorbs the nutrients, hydroponic farming's use of recirculation allows the substances to last longer. Therefore, the cost of purchasing nutrients is significantly less than it would be for traditional farming. Hydroponic farming is also economically advantageous because fertilizer, weedkillers and pesticides are not necessary in an enclosed atmosphere.

Finally, plants grown hydroponically need a medium other than soil in which to grow. The three main types of systems used in commercial hydroponic farming are the drip system, Nutrient Film Technique (NFT) and the raft system.<sup>29</sup> The drip system uses a medium such as perlite or rock wool, and the nutrients drip onto the medium to keep the roots moist.<sup>30</sup> Plants in an NFT system are lined up along a channel where solution runs, constantly exposing the root tips to moisture.<sup>31</sup> Finally, in the raft (or float) system, the plants float on a raft and the roots dangle into the nutrient-filled water.<sup>32</sup> Although establishing and maintaining any of these systems in a commercial hydroponic greenhouse can be costly, the high level of productivity would balance some of the initial costs. Outside funding would also mitigate some of the start up costs.

There are some disadvantages to hydroponic farming. Hydroponic greenhouses are expensive to set up and run. The temperature, lighting, and nutrient levels require constant supervision.<sup>33</sup> Hydroponic farming is also complicated, requiring specialized knowledge and

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<sup>28</sup> Greentrees, Hydroponics, <http://www.hydroponics.net/c/58>.

<sup>29</sup> Nelson/Pade, *supra*.

<sup>30</sup> *Id.*

<sup>31</sup> *Id.*

<sup>32</sup> *Id.*

<sup>33</sup> Boak, Robert, Leonard, Thomas, and Oursler, Khristopher, "Hydroponics", SUNY Oswego, <http://www.oswego.edu/nova/facts/hydroponics/hydroponics.html>

equipment.<sup>34</sup> However, solar energy can be used to mitigate some of the costs of heating and lighting, and available subsidies can ease some of the costs of starting and maintaining a hydroponic farm.

Another criticism of hydroponic farming is that the produce doesn't taste as good. Many variables affect the taste of hydroponic vegetables. The two largest are the variety of the plant and the mineral content where it is grown.<sup>35</sup> Another factor impacting the taste of hydroponic produce is the distance the product is shipped. The farther away the produce is shipped, the earlier it is harvested. Many crops are harvested before they are ripe so that they will withstand handling during the transportation process.<sup>36</sup> Growing produce locally can alleviate this problem because the plants can mature on the vine before they are harvested. Also, the ability to withstand transportation won't be necessary as the produce will be marketed in Buffalo. The City can feel confident that there will be a market for their hydroponic produce, as "nearly 40 percent of the fresh tomatoes sold at retail around the country are hydroponic."<sup>37</sup>

### **Potential Funding Sources**

There are several potential funding sources for a hydroponic farm in Buffalo. Federal Brownfield money and farming subsidies alone offer several opportunities. Other alternatives include New York State Brownfield money, green energy grants, Community Development Block Grants, and funding from other state and federal agencies.

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<sup>34</sup> Id.

<sup>35</sup> Miller, Tracey Ilene, "Water world; the many advantages of hydroponics", *Culinate*, Oct. 15, 2007, p. 1, <http://www.culinate.com/read/articles/hydroponics?page=0&pageSize=1>.

<sup>36</sup> Resh, Howard M., "Hydroponic farming at the Cuisinart Resort and Spa- Garden Destination- Cover Story", *Flower & Garden Magazine*, Nov., 2001, p. 1, [http://findarticles.com/p/articles/mi\\_m1082/is\\_6\\_45/ai\\_80308892](http://findarticles.com/p/articles/mi_m1082/is_6_45/ai_80308892).

<sup>37</sup> Miller, *supra*.

New York State Energy Research and Development Authority (NYSERDA) is a state agency focused on developing and implementing sustainable energy technologies. They have several incentive programs for businesses and residents interested in conserving energy. One such program offers incentives to businesses and municipalities who install Solar-Electric systems in their facilities.<sup>38</sup> This program offers cash incentives of \$5.00 per watt up to 25 kW for schools, not-for-profit organizations, and municipalities.<sup>39</sup> NYSERDA also offers low interest loans through its Energy Smart Loan Fund. This program provides interest rate deductions on loans from participating lenders.<sup>40</sup> Loans of up to \$1,500,000.00 can be subsidized through this program.<sup>41</sup> The City could take advantage of either of these initiatives to offset some of the startup costs of a hydroponic farm. Installing solar panels would not only entitle the City to continuing subsidies, but would decrease energy costs overall. An Energy Smart subsidized loan would provide the City with the initial capital for building and supplying a greenhouse.

Buffalo could also model a greenhouse on H2Grow, a hydroponic tomato farm located in Niagara County.<sup>42</sup> Modern Landfill, Inc., a non-hazardous solid waste landfill in Niagara County, partnered with NYSERDA to develop a landfill gas powered heating system for H2Grow's seven-acre hydroponic tomato farm.<sup>43</sup> Modern combusts its landfill gas in internal combustion engines to generate electricity.<sup>44</sup> The generation is done through Innovative Energy

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<sup>38</sup> New York Energy Smart Photovoltaic (PV) or Solar-Electric System Incentive Program, PON 716-012, <http://www.powernaturally.org/Programs/Solar/incentives.asp>.

<sup>39</sup> Id.

<sup>40</sup> New York Energy Smart Loan Program, PON 1060, <http://www.nyserdera.org/loanfund/default.asp>.

<sup>41</sup> Id.

<sup>42</sup> Modern Landfill, Inc., "Demonstration of Hydroponic Tomato Production at H2Grow", NYSERDA, <http://www.nyserdera.org/Programs/industry/CaseStudies/Modern%20Landfill.pdf>.

<sup>43</sup> Id.

<sup>44</sup> Id.

Systems, which operates Model City Energy, a 5.6 megawatt station.<sup>45</sup> Buffalo could work in conjunction with NYSERDA and Innovative Energy Systems to obtain less expensive electricity for its own hydroponic farm.

Another potential source of funding is the Northeast Sustainable Agricultural Research and Education (SARE) Farmer Grant Program. The purpose of this grant “is to develop, refine and demonstrate new sustainable techniques and to explore innovative ideas developed by farmers across the region.”<sup>46</sup> According to SARE, a practice is sustainable if it is “profitable, environmentally sound, and beneficial to the wider farm community.”<sup>47</sup> To qualify for this grant, the applicant need not be a full time farmer, but the operation must be a commercial one.<sup>48</sup> Not-for-profit and community-supported farms may also qualify.<sup>49</sup> An applicant awarded a grant under the SARE program will receive \$10,000 toward their innovative project.<sup>50</sup> A City hydroponic farm would qualify for this grant because using hydroponics is a sustainable and innovative way to farm. By eliminating soil, hydroponics averts soil erosion and contamination from fertilizers. Using a greenhouse also decreases the amount of space an urban farm occupies. Hydroponics uses significantly less water than traditional farming because it is constantly recirculated throughout the system. Hydroponic farming is also a sustainable practice because there are no carbon emissions from tractors or plows. Any carbon emissions created due to the greenhouse’s use of constant lighting can be mitigated by using solar energy and environmentally friendly LED lights.

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<sup>45</sup> Id.

<sup>46</sup> Northeast SARE, <http://www.uvm.edu/~nesare/FGinfo.html>.

<sup>47</sup> SARE 2008 Farmer Grant Application, p.4.

<sup>48</sup> <http://www.uvm.edu/~nesare/FGinfo.html>.

<sup>49</sup> <http://www.uvm.edu/~nesare/FGinfo.html>.

<sup>50</sup> SARE 2008 Farmer Grant Application, p. 5.

SARE also provides funding for community groups, local government, planning boards, and other organizations seeking to address “land use, nutrition, markets, employment, education, farm labor, public policy, and environmental quality” through farming.<sup>51</sup> Sustainability Community Grants offer up to \$10,000 for projects that are interesting and innovative, seek meaningful change, and have the potential for replication in other communities.<sup>52</sup> Funds will be given to projects that have a clear impact on sustainability.<sup>53</sup> An urban hydroponic farm would satisfy these goals because it is a greener method of farming which promotes sustainability by providing produce to urban communities. By selling the produce locally, an urban hydroponic farm can offer more affordable produce and can reinvest the profits in local jobs and maintaining the farm. In addition, an urban hydroponic farm is certainly capable of being replicated, as evidenced by the many successful hydroponic urban farms throughout the country.

The state and federal governments also offer funding for remediating and reusing brownfield lands. Brownfields are properties “the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.”<sup>54</sup> The City of Buffalo alone has 56 brownfields, which the City is committed to cleaning up and reusing.<sup>55</sup> Hydroponic farming is an excellent reuse of brownfield land because the soil is not necessary. However, remediation should be done in order for the City to take advantage of brownfield funding, and because it is in the City’s interest to clean contaminated land. Funding for a remediation and reuse plan is available through the Federal government. The Brownfields Economic Development Initiative (BEDI) is a grant that HUD administers to cities seeking to revitalize and redevelop actual or potentially contaminated land with the goal of

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<sup>51</sup> Northeast SARE, [http://www.uvm.edu/~nesare/grants\\_scomm.htm](http://www.uvm.edu/~nesare/grants_scomm.htm).

<sup>52</sup> SARE 2008 Sustainable Community Grants, p. 4.

<sup>53</sup> Id.

<sup>54</sup> 42 U.S.C.A. § 9601 (39)(A).

<sup>55</sup> City of Buffalo Comprehensive Plan, at § 2.4.8, pp. 76 (2004).

stimulating economic growth.<sup>56</sup> BEDI's main objective is encouraging economic development by assisting public entities in cleaning up and redeveloping Brownfield lands.<sup>57</sup> One of the central requirements for obtaining this funding is that the project increase economic opportunities for low and moderate income residents.<sup>58</sup> Buffalo would qualify for BEDI grants because running an urban hydroponic farm would provide year-round jobs for people with lower incomes. BEDI offers up to \$2 million, which Buffalo could use to remediate and redevelop a Brownfield with a hydroponic farm.<sup>59</sup>

### **Taking the Lead**

The City should take the lead in creating and maintaining a hydroponic farm in downtown Buffalo. Ample funding is available, reducing the City's investment costs. Making the farm a municipal operation will help ensure that employees receive adequate benefits and salaries. Connecting the farm to the City would also protect viability and sustainability. The City could market the farm's produce at the public market on Main Street, in addition to selling it at inner city grocery stores. Low transportation costs will keep the price of the produce low enough for people who normally can't afford healthy foods. The increased productivity of hydroponically grown plants would create revenues for the City, as the costs of operating the hydroponic farm will be mitigated by outside funding.

In addition, local colleges and universities will provide an important source of expertise as well as labor. Students could intern at the farm for class credit, and programs requiring community service could offer students the opportunity to volunteer at the hydroponic farm. As

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<sup>56</sup> U.S. Department of Housing and Urban Development, Department of Community Planning and Development, <http://www.hud.gov/offices/cpd/economicdevelopment/programs/bedi/index.cfm>.

<sup>57</sup> Id.

<sup>58</sup> Id.

<sup>59</sup> BEDI Quick Facts, <http://www.hud.gov/offices/cpd/economicdevelopment/programs/bedi/bedifacts.cfm>.

an educational tool, an urban farm will benefit the city and students in the short as well as long term. Students will gain valuable agricultural experience, and spending time at the farm might make them feel more invested in the community. They would be more likely to stay in Buffalo, and might initiate similar projects throughout the city. In addition, a City-run urban farm would put Buffalo on the cutting edge of climate change and environmental responsibility. Tourists, as well as people interested in establishing urban farms in their cities, would be more likely to travel to Buffalo.

By taking the lead, the City can ensure the success of an urban hydroponic farm. Although such a farm would benefit all Buffalo residents, the City would also make a profit and receive a return on its investment. Urban farming has proven successful both in Buffalo and throughout the country, and the City should take advantage of the many opportunities it offers.

### **Moving in the Right Direction**



Urban farming is not a new concept in Buffalo. For years, the Massachusetts Avenue Project (MAP) has been dedicated to “building the local community through food, urban farming, and entrepreneurship.”<sup>60</sup> Located on Grant Street on the West Side, MAP maintains an urban farm and advocates for local food production and distribution. MAP is currently building a straw bale greenhouse, hoping to grow enough seedlings both for their own farm and to sell to other local vendors such as Urban Roots Community Garden Center.<sup>61</sup> The greenhouse will also allow teens participating in MAP’s youth programs to grow herbs during the winter to sell to local restaurants. MAP’s “Growing Green” program trains and employs west side youths all year round.<sup>62</sup> This program “develops models for community revitalization through sustainable urban agriculture, youth entrepreneurship, and food systems development.”<sup>63</sup> During the summer, MAP hires about thirty youths to work on the farm, and they are paid through the Mayor’s Summer Youth Program.<sup>64</sup> About fifteen to twenty youths are kept on during the academic year, and are paid by MAP. One of MAP’s upcoming initiatives is funding a “mobile market”, which will travel to low income neighborhoods throughout the city selling fresh produce.<sup>65</sup>

Across the city on the east side, another urban farming endeavor is underway. Rod McCallum began Queen City Farm, located 194 East Utica Street, to transform vacant land in downtown Buffalo into a flourishing community farm and gathering place.<sup>66</sup> Recognizing that there is a fundamental need in low income communities for fresh and affordable produce, Rod McCallum’s vision is that low income families will have access to healthy foods that they

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<sup>60</sup> Massachusetts Avenue Project, <http://www.mass-ave.org/>.

<sup>61</sup> Breen, Lauren, Telephone interview 11/12/07.

<sup>62</sup> Id.

<sup>63</sup> <http://www.mass-ave.org/Growing%20Green.htm>.

<sup>64</sup> Breen, Lauren, Telephone interview 11/12/07.

<sup>65</sup> Id.

<sup>66</sup> Queen City Farm, <http://www.queencityfarm.org/>.

themselves help to produce.<sup>67</sup> Situated on about three acres of vacant land, Queen City Farm plans on cultivating two acres for distribution to the local community, and operating the other acre as a for-profit demonstration farm to show the possibility of making an income from urban farming.<sup>68</sup> According to McCallum, the goal of Queen City Farm is to teach residents how to build and maintain an urban farm, with the hopes that they will start one on their own property.<sup>69</sup> An urban farm such as Queen City Farm is important for Buffalo because it offers a good permanent use for the land; something that will not need to be torn down in later years.<sup>70</sup> Many of the vacant lots that Queen City hopes to use for the urban farm are owned by the City, and Queen City is currently working on proposals for acquiring that land. The Queen City Farm planning group has approached Commissioner of Economic Development Richard Tobe, who looks positively on the idea of an urban farm in downtown Buffalo.<sup>71</sup>

Finally, the Urban Roots Community Garden Center is a community owned cooperative located on Buffalo's West Side.<sup>72</sup> Open year-round, "Urban Roots works with local growers and artisans in order to bring the area regional products and support our local economy as much as possible."<sup>73</sup> Their goal is to offer affordable, local, organic plants as well as gardening products to the community.<sup>74</sup> The organization also seeks to engage the community and educate local residents about beautification and urban renewal.<sup>75</sup> Through its cooperative business model, Urban Roots seeks to operate a profitable business whose main beneficiaries are the community.

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<sup>67</sup> Miller, Anna, "Queen City Farm: Creating Urban Agriculture", *Buffalo Rising*, April 30, 2007.

<sup>68</sup> McCallum, Rod, Telephone Interview, 11/13/07.

<sup>69</sup> McCallum, Rod, Telephone Interview, 11/13/07.

<sup>70</sup> Id.

<sup>71</sup> Id.

<sup>72</sup> Urban Roots, <http://www.urbanroots.org/>.

<sup>73</sup> Id.

<sup>74</sup> Urban Roots Mission Statement, <http://www.urbanroots.org/about>.

<sup>75</sup> Id.

These organizations demonstrate the potential of running a successful and profitable urban farm. The City should consider consulting or working with them to develop its own model for an urban hydroponic farm. The high level of interest in these organizations demonstrates the need and desire of City residents for locally grown, affordable produce.

### **Conclusion**

Urban farming is fast becoming a necessity in American cities. With the continued depletion of farm land due to development and soil erosion, city dwellers will soon have to rely on alternative methods of food production. Urban farming can provide residents with affordable high quality fresh produce. Because hydroponic farming takes place in an enclosed environment, fresh produce can be available year-round. Many American cities are making the availability of healthy food a policy priority.

An urban hydroponic farm in Buffalo should be a policy priority because many City neighborhoods are considered “food wastelands.” There are no grocery stores within walking distance, causing residents to rely on corner convenience stores to provide their food.<sup>76</sup> These same neighborhoods are home to the highest number of vacant lots. Urban farming presents a tremendous opportunity for the City to reuse these lots, provide healthier food for local residents, and revitalize downtown. The Queen City Farm, Massachusetts Avenue Project, and Urban Roots Community Garden Center exemplify the attainability of a successful urban farm. By taking the lead, the City can ensure the sustainability of an urban hydroponic farm. We will all benefit from increased revenues, the creation of jobs, better health of the local population, a rejuvenated image as a green city, and a reinvigorated local economy.

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<sup>76</sup> See, comments of Samina Raja, Professor of Urban and Regional Planning at the University at Buffalo, as recorded in “Let’s Grow Buffalo!”, a short film by John Paget, <http://www.queencityfarm.org/QCFfilm.mov>.