

# How Does Your Garden Grow?

## Brownfields Redevelopment and Local Agriculture



### Introduction

Communities nationwide use brownfields funding to assess and clean sites for a variety of uses, including community gardens and farmers markets. Brownfields are properties that are vacant or abandoned due to concerns about real or perceived contamination on the property. Using funds from EPA, states, tribes and other sources, communities can assess sites and clean brownfields, creating safe spaces where people can grow their own food, or buy locally-grown food. The cleanup and redevelopment process helps to ensure safe and healthy garden and market areas.

People are becoming more aware of the types of food they eat, where it is grown, and how it is transported to their local market. The availability of such information encourages some consumers to seek locally-grown food. Backyard and community gardens allow people to grow their own food locally. Farmers markets give many residents access to locally-grown food and provide outlets for local farms.

While there is no national estimate of the total number of urban or community gardens, organizations such as the American Community Gardening Association (ACGA) estimate there are more than 18,000 community gardens in the U.S. and Canada.<sup>1</sup> Organizations in many metropolitan areas manage garden plots for residents. In some cities, community gardens are managed by the parks departments, while in others, community gardens are managed by volunteer organizations affiliated with food banks or churches. According to the U.S. Department of Agriculture, the number of farmers markets increased by 6.8% from 2006 to 2008, and since 1994, the number of farmers markets increased by nearly 3,000, to a current estimate of approximately 4,600.<sup>2</sup> Throughout the country, communities are responding to this trend by transforming contaminated properties into locations where communities can grow and buy food locally.



*Allen Street Community Garden, a former brownfield in Somerville, Massachusetts, before (above) and after renovation.*



Photo Courtesy of City of Somerville

### Possible Contaminants of Concern on Brownfields

- Petroleum and waste oils
- Lead and other metals
- Volatile Organic Compounds (VOCs)
- Pesticides
- Polycyclic aromatic hydrocarbons (PAHs)

1 [www.communitygarden.org/learn/faq.php](http://www.communitygarden.org/learn/faq.php)

2 [www.ams.usda.gov/AMSV1.0/getfile?dDocName=STELPRDC5072472&acct=fmrdirnkt](http://www.ams.usda.gov/AMSV1.0/getfile?dDocName=STELPRDC5072472&acct=fmrdirnkt)

## Communities Cleanup and Redevelop Contaminated Property for Local Agriculture

### Allen Street Community Garden, Somerville, Massachusetts

This site is a former residential property in Somerville, Massachusetts that lay idle since the 1950s. Using an EPA Brownfields Assessment grant, Phase I and II environmental assessments were conducted revealing contaminants in the soil and water. In 2007, the city began to clean up the property using an EPA Brownfields Cleanup grant. Construction of the Allen Street Community Garden was completed later that year. Throughout the process, the City of Somerville conducted special outreach efforts to encourage multi-cultural participation. With the help of local organizations, the city translated public notices into Spanish, visited the homes of Spanish-speaking residents, and in place of a traditional community meeting, held a gathering where the city solicited residents' comments on the plan for the garden. This community garden, one of the city's eight, is an oasis for the residents of Somerville—New England's most densely developed city—providing a place to grow flowers and vegetables and an area for community members to sit and enjoy the neighborhood. According to one garden volunteer, there is tremendous interest in the garden; more than 25 people are on the waiting list for their own plot.

- The park includes fifteen gardening plots, which have been planted by community members. One of the plots is ADA (Americans with Disabilities Act) accessible – a first for the city.
- Two volunteers organize cleanups on the common area and in the spring they sign up new gardeners and help to prepare the beds for planting.
- Chemical fertilizers and insecticides are strongly discouraged in the gardens.

### Shelton Farmers Market, Shelton, Connecticut

The Shelton, Connecticut farmers market is open every Saturday and Wednesday from July to October in a newly constructed 2,220-square foot market pavilion. The pavilion is part of the Shelton Enterprise & Commerce Park, the first phase of the city's downtown waterfront redevelopment. Initial environmental site assessments of the property showed no cleanup was necessary. However, as construction proceeded, contaminants were discovered in the soil. In 2005, the city placed a temporary liner and gravel cap on contaminated areas of the property to safely allow for construction of the market pavilion to be completed. The farmers market opened later that year. In the meantime, the city applied for and received an EPA Brownfields Cleanup grant in 2005, allowing the city to remove the temporary cap and contaminated soil and replace them with clean fill above a newly-constructed permanent soil cap. The permanent cap isolates deeply buried contaminated soils that were not excavated. The farmers market was able to stay open through the cleanup process and continues to provide residents with access to locally-grown food.



*Residents shop at the Shelton, CT farmers market.*

Photo Courtesy of Shelton Economic Development Corporation

- Cleanup was completed in January 2006.
- The soil cap ensured that the remaining contaminated soil, buried deep underground, would not pose an environmental or health risk.
- The farmers market offers at least a dozen food, flower and craft vendors each week drawing visitors to the downtown Shelton waterfront.

### Implications of Brownfields Redevelopment for Communities

Brownfields redevelopment can address contamination in communities and create a community asset. The environmental benefits of brownfields reuse extend beyond property cleanup; redeveloping properties into community gardens and venues for farmers markets provides local fresh food to the community and economic opportunity to small farms. These abandoned properties are transformed into community gathering places allowing residents to enjoy and take pride in their neighborhoods.

A Philadelphia area study estimated that vacant land improvements result in a 30% increase in surrounding property values.<sup>3</sup> Further, a recent study in St. Louis, Missouri suggests that neighborhood vitality, as indicated by factors such as increased property values, increased household income and decreased poverty, is positively influenced by nearby community gardens.<sup>4</sup> These studies suggest that cleaning up contaminated land and creating space for local agriculture has far-reaching benefits for the community.

Communities interested in establishing or expanding urban gardens, farms or markets on brownfields should assess the sites and clean them, where necessary, to ensure the site is safe for growing food for consumption. Communities can benefit from the experience of brownfield professionals and urban agriculture experts and practitioners in creating gardens, urban farms and orchards or planting trees, grasses and flowers to create new habitat.

## Steps from Brownfield to Community Garden

### Site Preparation

- Contact your State Environmental Agency, agricultural extension office or EPA Regional Brownfield coordinator, Tribal, or State brownfield team to learn if they have assessed or cleaned prospective sites or have targeted brownfields assessment (TBA) funds to support your efforts.
- Apply for Brownfield grant funds if you need help to assess and clean a site.
- Talk with your city or town about gardens as an interim or permanent use for vacant land.
- Assess sites before you buy, lease or borrow to ensure the site is safe for food.
- Learn how to use greener materials when establishing your garden from the Sustainable Sites Initiative at: [www.sustainablesites.org/](http://www.sustainablesites.org/).
- Bring clean fill or mulch from certified sources for raised beds and cover.
- Work with nature to save time and money. Learn more at: [www.epa.gov/greenscapes](http://www.epa.gov/greenscapes).

### Community Garden Development

- Contact your local Agricultural Extension Service about soil testing and crop recommendations for your area.
- Read the UC Davis 'Community Garden Start-Up Guide' to learn more: [celosangeles.ucdavis.edu/garden/articles/startup\\_guide.html](http://celosangeles.ucdavis.edu/garden/articles/startup_guide.html).
- Build for all ages and abilities. Where possible, create raised bed gardens near the entrance for those in wheelchairs and beds for children to plant safely.
- Grow your garden community and link with groups improving the environment, food systems, public health, education, development and the neighborhood. Learn more about the benefits of gardens at: [www.gardenworksmn.org/Resources/multiple\\_benefits.pdf](http://www.gardenworksmn.org/Resources/multiple_benefits.pdf).
- Go organic in your garden. Limit chemical fertilizers, pesticides, and herbicides.

### Check the Soil Before You Buy A Site or Plant

#### Environmental Contaminants

Before you buy, are given or borrow a property for a garden or farm site, consider doing a Phase I Environmental Site Assessment. It includes a number of steps, including a review of historical uses of the site, interviews with neighbors, and a visual inspection. (For more information on brownfields or "All Appropriate Inquiry," please see [www.epa.gov/brownfields](http://www.epa.gov/brownfields) or [www.ASTM.org](http://www.ASTM.org) for more information on the ASTM E1527-05 standard.) A Phase I Environmental Site Assessment will help you determine if a site is contaminated. Phase II continues the environmental site assessment and includes additional site review, sampling and analysis.

#### Soil Quality and Growing Conditions

It is important to test the soil and ensure the proper pH, soil nutrients and organic content in the soil if you want to grow healthy plants and save water. For information on local soil testing services, see the links to the USDA Cooperative Extension System in the resources section.

The list on the following page provides links to resources for brownfields cleanup and reuse as a garden or market.

3 [gislab.wharton.upenn.edu/silus/Papers/GreeningStudy.pdf](http://gislab.wharton.upenn.edu/silus/Papers/GreeningStudy.pdf)

4 [www.gatewaygreening.org/WhitmireStudy.asp](http://www.gatewaygreening.org/WhitmireStudy.asp)

## Funding and Technical Support Resources

### Brownfields Resources

#### U.S. EPA Brownfields Funding

[www.epa.gov/brownfields/pilot.htm](http://www.epa.gov/brownfields/pilot.htm)

#### U.S. EPA Brownfields Success Stories

[www.epa.gov/brownfields/success/sacramento\\_ca\\_BRAG.pdf](http://www.epa.gov/brownfields/success/sacramento_ca_BRAG.pdf)

[www.epa.gov/brownfields/success/hartford.pdf](http://www.epa.gov/brownfields/success/hartford.pdf)

#### U.S. EPA Brownfields State and Tribal funding

[www.epa.gov/brownfields/state\\_tribal.htm](http://www.epa.gov/brownfields/state_tribal.htm)

#### U.S. EPA Brownfields TBA funding

[www.epa.gov/brownfields/facts/tba\\_0403.pdf](http://www.epa.gov/brownfields/facts/tba_0403.pdf)

#### Kansas State University EPA TAB Grantee

[www.engg.ksu.edu/CHSR/outreach/tab/](http://www.engg.ksu.edu/CHSR/outreach/tab/)

#### State Cleanup Programs

[www.epa.gov/brownfields/pubs/st\\_res\\_prog\\_report.htm](http://www.epa.gov/brownfields/pubs/st_res_prog_report.htm)

#### U.S. EPA's GreenScapes Program

[www.epa.gov/greenscapes/](http://www.epa.gov/greenscapes/)

#### Groundwork USA

[www.groundworkusa.net/](http://www.groundworkusa.net/)

#### Growing Power

[www.growingpower.org/](http://www.growingpower.org/)

### Agricultural Resources

#### American Community Gardening Association

[www.communitygarden.org/](http://www.communitygarden.org/)

#### National Gardening Association

[www.garden.org/home](http://www.garden.org/home)

#### USDA Cooperative Extension System

[www.csrees.usda.gov/Extension/index.html](http://www.csrees.usda.gov/Extension/index.html) or  
[www.extension.org/horticulture](http://www.extension.org/horticulture)

#### USDA Alternative Farming Systems Information Center

[afsic.nal.usda.gov/](http://afsic.nal.usda.gov/)

#### USDA Farmers Markets information

[www.ams.usda.gov/farmersmarkets/](http://www.ams.usda.gov/farmersmarkets/)

#### North American Farmers' Direct Marketing Association

[www.nafdma.com/FMC2/](http://www.nafdma.com/FMC2/)

#### Farmers Market Coalition

[www.farmersmarketcoalition.org/](http://www.farmersmarketcoalition.org/)

#### American Horticulture Society Master Gardeners

[www.ahs.org/master\\_gardeners/](http://www.ahs.org/master_gardeners/)

