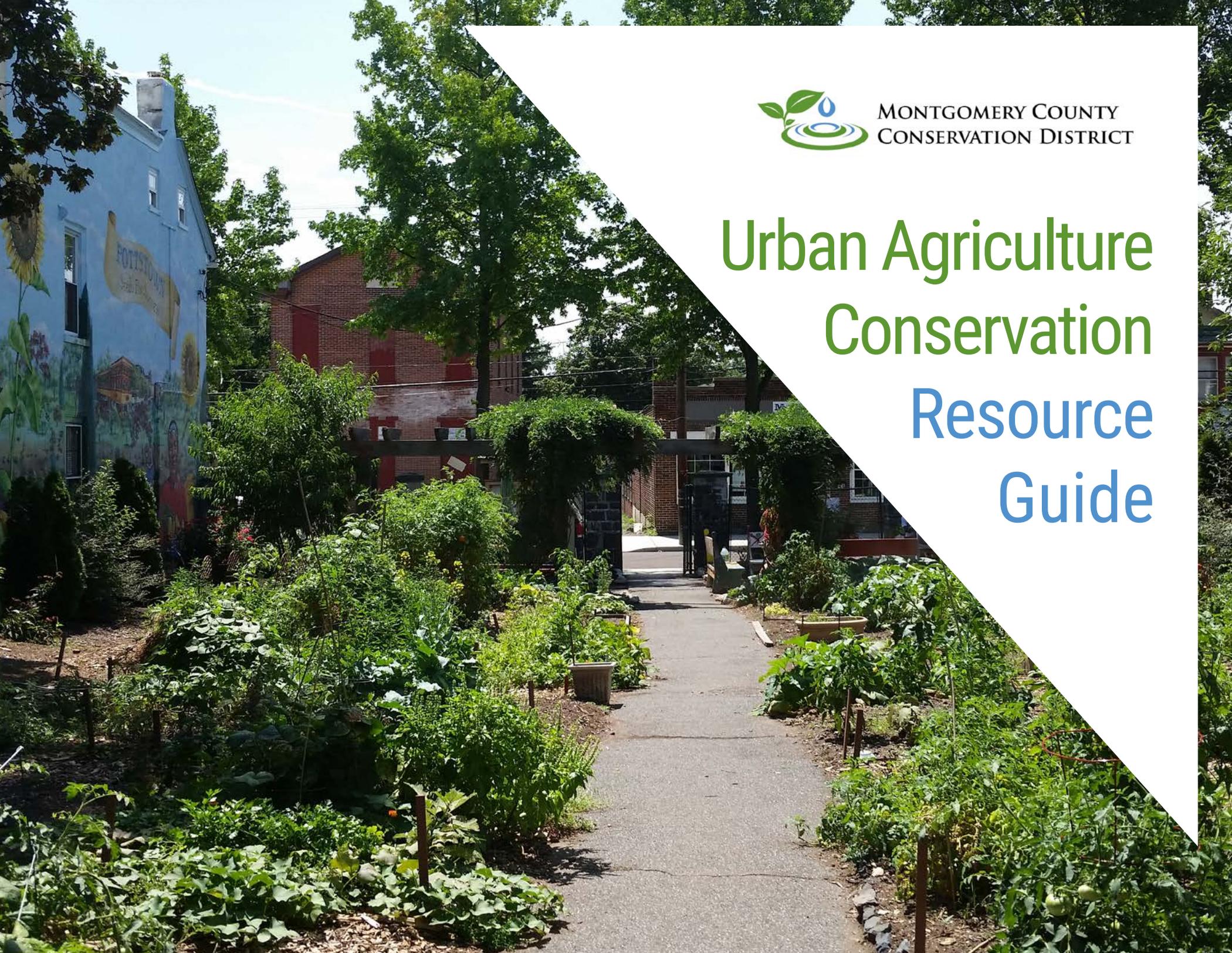




MONTGOMERY COUNTY
CONSERVATION DISTRICT

Urban Agriculture Conservation Resource Guide



“A lack of access to fresh, healthy foods can contribute to poor diets and higher levels of obesity and other diet-related diseases.”

(Healthy Food Access, USDA.gov)



URBAN AGRICULTURE:
Bringing safety, green space, and value to a neighborhood
while improving a community's health



INTRODUCTION: Seeds for Success

From small vacant city lots to rooftops, alleyways, and parks to urban open spaces, opportunities exist in almost every community to create gardens that feed people, teach the importance of agriculture, improve nutrition, and enhance community life.

Along with providing a much-needed source of healthy, locally-grown food, urban gardens provide a wide range of benefits, including:

- Soil, air, and water quality improvements
- Stormwater management
- Increased property values and aesthetics
- Education and recreational opportunities for communities and schools
- Beneficial pollinator and wildlife habitat
- Reduced crime and an increased sense of belonging to a community

This booklet offers step-by-step guidance for establishing an urban garden, to help YOU turn an underutilized space into a productive community asset. We hope it inspires you to plant the seeds of change in your neighborhood and share the bounty of the harvest that results!

05

The Benefits of Urban Agriculture

Nutrition and Health.....	06
Education and Urban Youth.....	07
Quality of Life.....	08
Wildlife and Pollinator Habitat.....	09

11

Important Considerations

Conservation & the Environment..	12
Urban Runoff.....	13
Soil.....	14
Water.....	16

17

Site Selection

Site Ownership.....	18
Site Access & Resources.....	19
Municipal Requirements.....	20

21

The People

Volunteers, Members, Community Support.....	22
Tasks, Committees, Rules.....	23
Retaining Support.....	24

26

Dollars and Cents

Start-up & On-going Maintenance Costs.....	27
Membership Fees.....	28
Fundraising and Grants.....	29
In-kind Donations.....	30

31

Designing an Urban Garden

Site Preparation.....	32
Stormwater Management.....	33
Wildlife Control.....	34

35

15 Interactive Garden Models

37

Operations

Garden Planting.....	38
Garden Maintenance.....	43

47

Harvesting & Year-End Wrap Up

49

Conclusion

THE BENEFITS OF URBAN AGRICULTURE





NUTRITION AND HEALTH

Fresh food is higher in nutrients and lower in fats, salts, and sugars than processed foods—yet obtaining healthy, fresh food is often a challenge in Montgomery County’s urban areas.

Even where supermarkets are nearby, the available “fresh” food is usually subjected to standard practices in the American food industry: it has been picked unripe, processed, packaged, and shipped a long distance to our local store. Produce fresh from the garden lacks the preservatives, packaging and chemicals often applied to commercial produce to keep it fresh in the store. Food that is grown in a community garden not only has higher nutritional value, it just tastes better.

Plus simple changes to diet, like cooking with fresh herbs instead of salt, can make a significant improvement in an individual’s health. Herbs—such as basil, parsley, dill, and cilantro—are easily grown in pots or small garden plots; they’re perfect for any sized urban garden, or even a windowsill pot!

EDUCATION AND URBAN YOUTH

Gardens are a tremendous asset to school districts, and a number of schools in Montgomery County are planting gardens and incorporating their use into the curriculum.



School gardens have the potential to teach a wide range of skills and topics, including biology, chemistry, soil science, weather, environmental science, horticulture, entomology, physical fitness, nutrition, mathematics, design, and more.

Involving young people in the creation and care for gardens helps nurture:

- Basic business principles
- Leadership opportunities and responsibility
- Job and life skills
- Healthy eating
- Environmental stewardship
- Physical fitness opportunities
- Access to fresh air and an outdoor environment

Urban gardens can also act as a classroom for adult community members and are excellent venues for everything from informal peer-to-peer learning to formal programs held in the space.

QUALITY OF LIFE



Unused properties can drag down a neighborhood. They can become an eyesore, attract trouble, and break the continuity and energy of a street. Urban gardens can have the exact opposite effect, increasing aesthetics, a sense of community ownership, stewardship, involvement, and pride.

Along with stability and social interaction, community gardens create opportunities for exercise, fresh air, and the psychological benefits of immersing oneself in nature.

Turning an unused property into a productive one:

- 1 Creates an aesthetic amenity that is a recreational and educational asset
- 2 Increases property values
- 3 Lowers crime rates
- 4 Brings people together for a common purpose
- 5 Creates new leaders and enhances volunteerism in the community

Did you know?



A single little brown bat can eat up to **1000 mosquitos** per hour



Native plants provide **the most benefit** in terms of food for pollinators

Penn State Extension has some helpful information on gardening for wildlife in an eco-friendly way [here](#).

WILDLIFE AND POLLINATOR HABITAT

In addition to growing food, urban gardens provide habitat for beneficial wildlife, pollinators and pest predators. Pollinators (such as bees, butterflies, ants, beetles, bats, and hummingbirds) are vital for the successful fertilization of garden plants and fruit, while predators (including lady beetles, birds, amphibians, and harmless snakes) manage the pests that threaten gardens.

Think of your garden as a mini-ecosystem in a city block—and realize that having a healthy garden ecosystem is key to a garden's success!





BUILDING COMMUNITY:
Urban gardens connect residents to food, environment, and one another

IMPORTANT CONSIDERATIONS





CONSERVATION AND THE ENVIRONMENT

Healthy soil and access to clean water are key building blocks of any garden, and are particularly important in urban agriculture where contamination or adequate supply are common challenges. Soil is the foundation for life and the basis for growing food, while water is imperative for plant growth.

Growing food brings opportunities to promote soil and water conservation, which will improve the environment and lay the foundation for the ecosystem to grow crops. In an urban setting, healthy soil and access to water is often limited, so it is important to think about conserving these precious resources when taking on an urban agriculture project.

When it Rains

Regular rainfall is a good thing for plants, but stormwater runoff from rooftops, parking lots, roadways, and nearby properties can carry pollutants into community gardens. It can also cause erosion, which transports soil along with other harmful pollutants into local sewer systems, and rivers and streams.

Polluted runoff can contain:

- Road salt
- Motor oil
- Trash and litter
- Heavy Metals
- Pesticides and herbicides
- Other chemicals

The term Best Management Practices (BMPs) refers to conservation strategies aimed at preventing polluted runoff, erosion, and sedimentation from degrading our waterways. Municipalities are regulated by the State under the municipal separate storm sewer system (MS4) program, which requires a variety of BMPs be utilized to protect water quality in our rivers and streams. Implementing BMPs in urban gardens has the potential to provide credits towards a municipality's stringent MS4 permit requirements.

Erosion control and stormwater management are discussed in more detail on page 32 and 33 of this guide.



Oftentimes, urban gardens are sited on former building lots, parking areas, or even dump sites, which could mean they contain contaminated soils that present a threat to human health. Knowing the history of a potential site and testing the soil are crucial steps to take prior to final site selection.

If soil contamination is present, remediation is often possible. Gardening in raised beds, importing clean top soil, or amending and improving the soil may also be options if clean up is cost prohibitive.



Healthy Soil

Organic matter, microbes, and other elements are needed for plant growth and yield.

Urban soils frequently lack sufficient amounts of key nutrients, such as nitrogen, phosphorus, potassium, and other micronutrients.

Soil texture and structure are also important components, as certain crops require specific soil types, drainage properties, and growing conditions.

Urban soil may be compacted and lack topsoil, requiring amendment prior to planting. Compaction will be a significant hindrance, in terms of both root growth and drainage.

Performing a soil analysis is the first step when evaluating a potential site's soil resources. **The Environmental Protection Agency, local Cooperative Extension Services, and independent laboratories can assist with testing for contaminants.**



Drainage

Adequate drainage is important for a healthy community garden, as waterlogged soil can impair plant growth and promote disease. Not only does soil need to drain well, it needs to hold water adequately to nourish your plants.

Soil Conservation

Soil conservation ensures that the growing medium for your plants is the best it can be, while also minimizing erosion.

Soil conservation measures ensure:

- topsoil stays in the garden
- soil structure is preserved
- nutrients are maintained

For an excellent explanation of healthy soil and how to achieve it, see Penn State Extension's [webpage](#) on the subject .

Access to water is often a limiting factor in site selection for urban gardens, yet a steady source of clean water is imperative for plant growth, especially during hot dry summer months. Like soil contamination, groundwater or reclaimed water that is contaminated presents challenges, so testing may be required to ensure the safety of your water sources.

Rain barrels and cisterns—which connect to roof gutter downspouts—can offer a double bang for the buck for urban gardeners because they provide access to water and manage stormwater. They alone, however, are not reliable sources of water for an entire garden, especially in times of drought, so a backup water source is critical. While water from rain barrels should definitely not be used for drinking, the jury is still out on its safety as a water source for edible plants—and all guidance suggests using rain barrel water only on soil, not directly on plants. Keeping rain barrels clean and well maintained is key, but it's always wise to have your water tested to be sure it is safe to use.

Any collection system should be sized appropriately to handle the amount of runoff it receives. Penn State Cooperative Extension has a good sizing guide available [here](#).

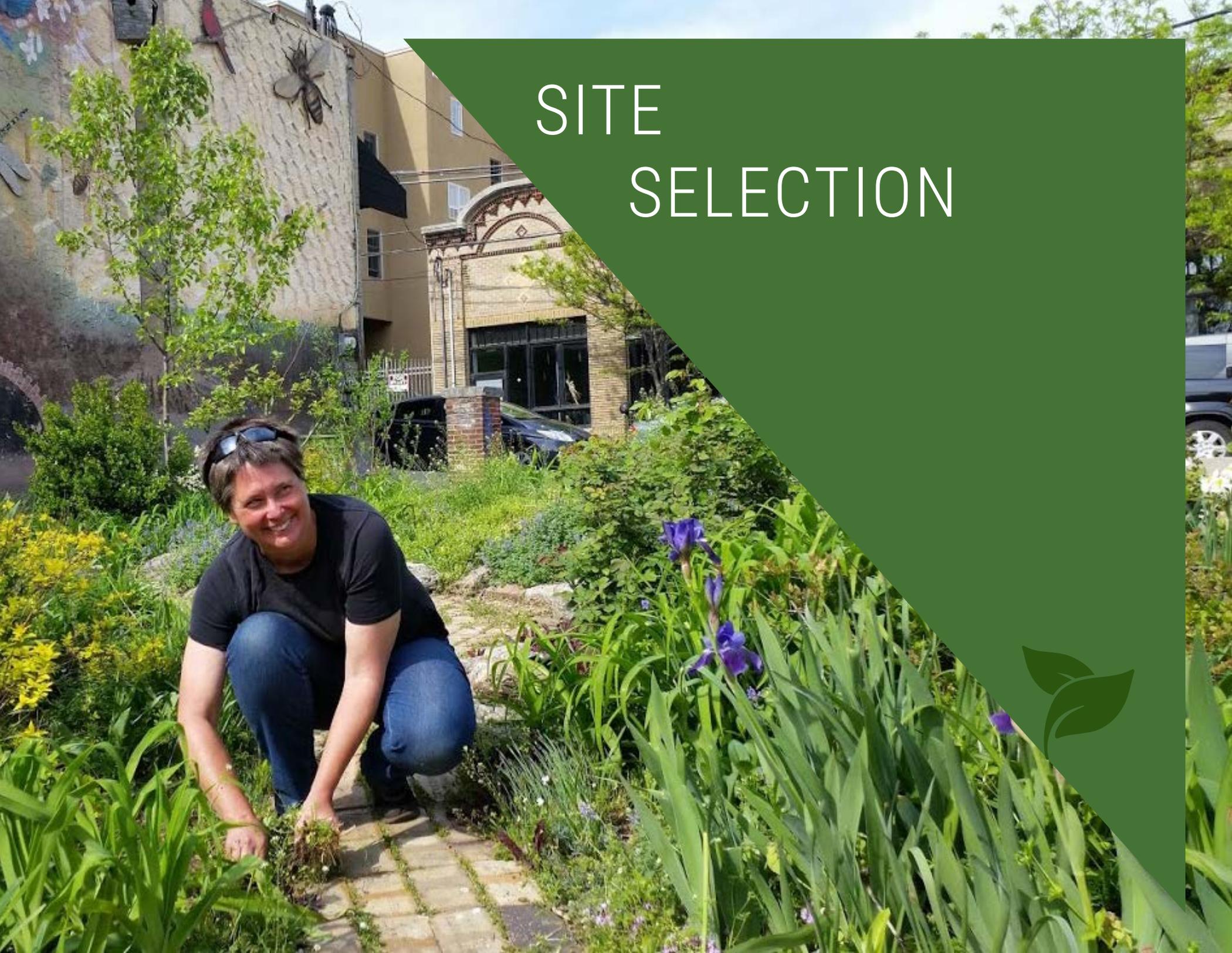
Water Conservation

Regardless of your source of water, employing conservation measures can help with water management in urban gardens:

- **Using native plants**, which are adapted to the local climate and require less frequent watering
- **Mulching** to lock in moisture and cut down on watering
- **Using drip irrigation** or soaker hoses to cut down on water loss due to evaporation
- **Watering** at appropriate times of the day and week, keeping an eye on the forecast
- **Collecting water** through the use of rain barrels or cisterns for reuse



SITE SELECTION



SITE OWNERSHIP

One of the first steps in organizing a community garden is locating an appropriate site. Sometimes a vacant lot is the impetus for forming a garden, but other times securing land is very challenging.



Suitable sites may include:

- Vacant lots
- School property
- Open lawns of religious institutions
- Land adjacent to community organizations—community center, senior center, library, food pantry, or other civic buildings
- Common space in residential neighborhoods
- Rain gardens in parking lots
- Public parks

Before selecting a site, ensure that permission has been granted by the property owner and follows all municipal requirements.

Make an agreement in writing, outlining such details as:

- Function of the space
- Terms of a lease
- Access to water for the site
- Who will have access
- Liability insurance
- Other pertinent issues

A simplified sample land use agreement form, from the American Community Gardening Association, is available [here](#).

Proximity to community members

In urban settings that lack transportation options, it is important to locate gardens within walking distance for community members. Convenience increases engagement and the likelihood of success.

- 1 Make an easy commute
- 2 Consider access in hot summer months, when watering is crucial
- 3 Think about access via sidewalks, an important safety factor
- 4 Promote the Community Garden by adding a colorful sign and include the name and contact information of the organization in charge

Access to sunlight and water

Typically, natural rainfall does not provide adequate water to a thirsty rural vegetable garden throughout summer months. When selecting a site, keep in mind that most vegetable species need a minimum of six hours of direct sunlight every day. Consider that adjacent buildings could block sunlight. If light is limited, select root and leaf vegetable species that tolerate less light, such as carrots, kale, swiss chard, or peas.

If water access is limited, understand that adding waterlines can be costly, but it may be possible to work out an agreement with the municipality, a neighboring organization, or a property owner to access water from a nearby hydrant or building. Rain water collection in barrels or a cistern from the downspouts of adjacent buildings may also be an option but should not be the sole water supply. Ensuring an adequate and consistent water supply in the early stages of site selection will save headaches later.

MUNICIPAL REQUIREMENTS



Zoning & Land Use Regulations

When plotting a location for a community garden, it is important to consider the property's zoning and land use requirements. While not all municipalities have a specific section of their code dealing with urban agriculture or community gardens, many do have requirements in their residential and commercial zoning provisions related to the keeping of animals and accessory structures like greenhouses and apiaries. Some municipalities' zoning codes and local ordinances may not allow for agricultural projects or community gardens on certain types of properties, so you should be sure to contact your local municipality and ask about any such restrictions as soon as you have identified a possible property.

THE PEOPLE



Dedicated volunteers are a critical component of success. There is no replacement for hands-on-the-ground and expertise to manage the gardens.



VOLUNTEERS, MEMBERS, COMMUNITY SUPPORT

To get community members involved, post flyers and posters at local businesses and around the neighborhood; place notices in area newsletters and on the social media pages of local organizations and community leaders; connect with after-school/church organizations.

Hold multiple community meetings so people can learn about the garden, ask questions, share ideas, and sign up for garden plots.

To keep people engaged, get them to care about the cause and offer a variety of tasks and responsibilities to accommodate different levels of interest, personality types, and schedules.

Consider that an urban agriculture project provides an opportunity for corporations, churches, schools, and service clubs to engage in volunteer efforts. Reach out to these kinds of groups to see if there are creative ways to collaborate: take on special projects, get extra help with garden upkeep, weed common areas, facilitate peer-to-peer education, create a community gathering space.



TASKS, COMMITTEES, RULES

Second to site selection, establishing an operating structure and assigning roles is the crucial next step in moving forward with a new garden. Positions may be paid, all volunteer, or a combination of both.

Examples of critical roles include:

- Manager or Director
- Membership Coordinator
- Volunteer Coordinator
- Treasurer
- Marketing/Social Media Person
- Operations/Governance

A useful set of rules can be found at the [American Community Garden Association Website](#).

A more detailed set of rules can be found through [City Farmer](#).

Also of note: be sure to obtain liability insurance to cover anyone working or volunteering in the garden!

RETAINING SUPPORT

Keeping gardeners and volunteers engaged is a challenge that every community garden faces throughout its operation, yet is vital to a garden's success and viability. A key to retaining interest in the garden is to make it fun and rewarding.

Ways to do this include hosting regular events at the garden such as:

- Potlucks
- Group work days
- Movie nights
- Workshops
- Barbecues
- Yoga nights
- Farm stands
- Community meetings

When designing your community garden, it's a good idea to consider leaving some flexible space to accommodate such items as a picnic table area, a covered area, and restrooms of some sort.

Communication creates buzz and keeps people involved:

Generate a newsletter and/or use social media to communicate what is happening in the garden.

Reward and thank garden volunteers. A monthly or annual award for service or a friendly competition to ignite participation may encourage volunteers to remain dedicated.

Market your garden using strategies such as door-to-door contact, a social media presence, distributed flyers via local businesses, churches, clubs, and schools; and posters hung around the neighborhood.

Establishing an e-mail distribution list early on in the process to save time in the future.

Set up a publicity table at local events, school carnivals, or at a local farmer's market to get the word out.

Engage in community partnerships and invite neighbors in to see what you are doing to get people interested in participating.

Tips for a Successful Community Garden

- 1 Hold regularly scheduled workdays to establish expectations about upkeep and allow gardeners to meet one another.
- 2 Require and enforce minimum hour contributions to help maintain the garden.
- 3 Post rules and updates in an easy-to-see location in the garden, and keep a space available for notifying members about upcoming events.
- 4 Solicit sponsors from the community and keep them informed of garden happenings.
- 5 Hold at least one orientation meeting before the planting season begins in order to help new members learn how the garden operates and teach them basic skills.
- 6 Suggest an organization, such as local food bank, for donation of excess produce.
- 7 Tap local garden clubs and County Extension Services to bring in experts to teach workshops on different aspects of gardening, nutrition, and more.
- 8 Add a shed for securely storing gardening tools and supplies such as shovels, rakes, trowels, hoses, hoes, and a first aid kit.
- 9 Install fencing to keep animals and children out and define the area under care of the gardeners. A gate with a lock may be necessary, depending on the environment of the neighborhood.

DOLLARS AND CENTS



Land

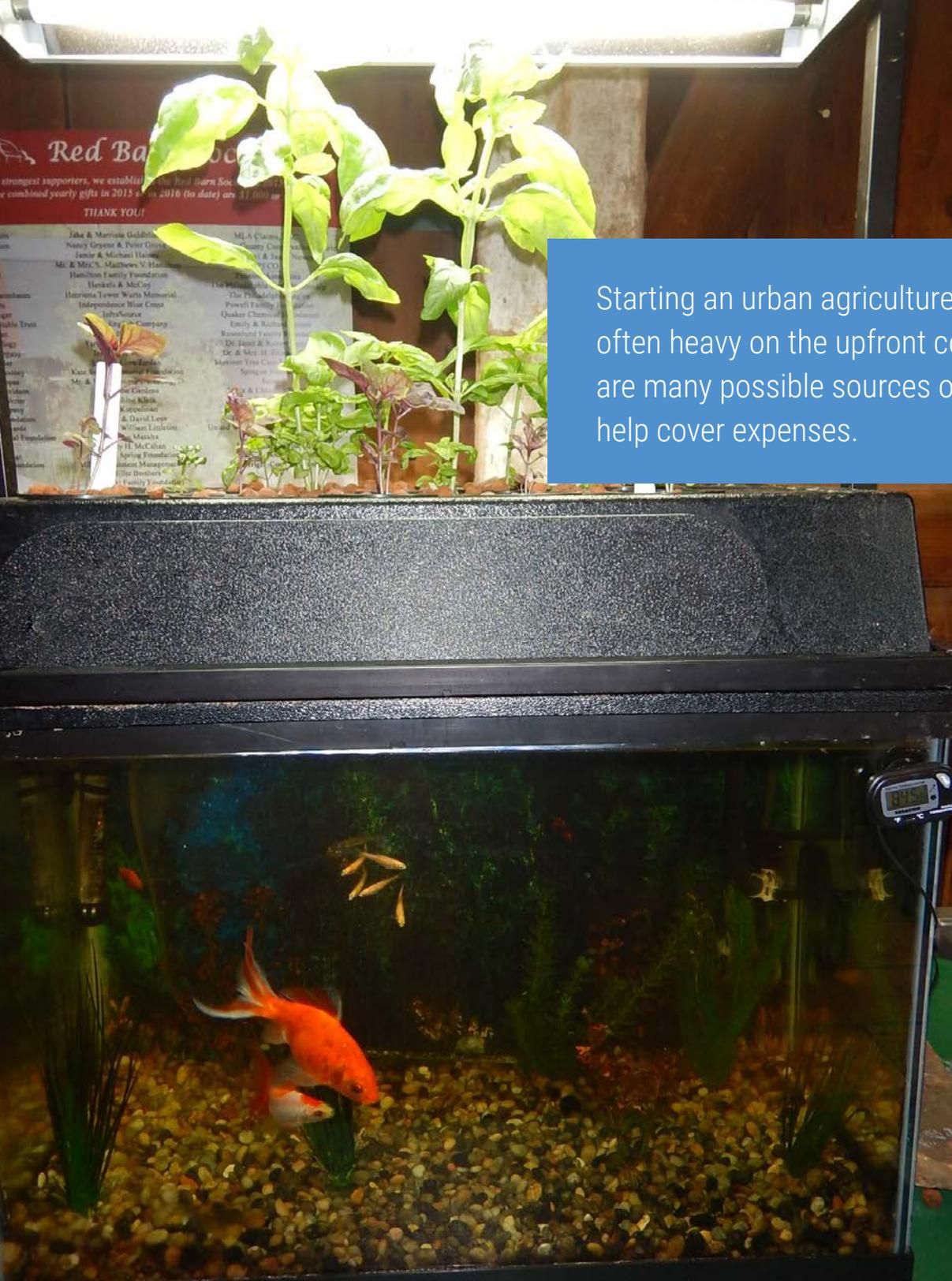


River



Lake





START-UP & ONGOING MAINTENANCE COSTS

Starting an urban agriculture project is often heavy on the upfront costs, but there are many possible sources of funding to help cover expenses.

Funding sources include membership dues/garden plot lease fees, grants, corporate donations, in-kind donation of money and supplies. Costs to keep in mind include:

- Ground lease fees for the garden space
- Permit application and title search fees, if applicable
- Remediation, if needed, to address contamination
- Soil amendments and tillage
- Installation of a water source
- Construction of raised beds, mulch or rock for pathways, and topsoil
- Garden shed, tools, and/or rain barrels
- Fencing
- Printing, signage, marketing, and advertising costs
- Liability insurance
- Mowing, garbage collection, and portable toilet rental fees



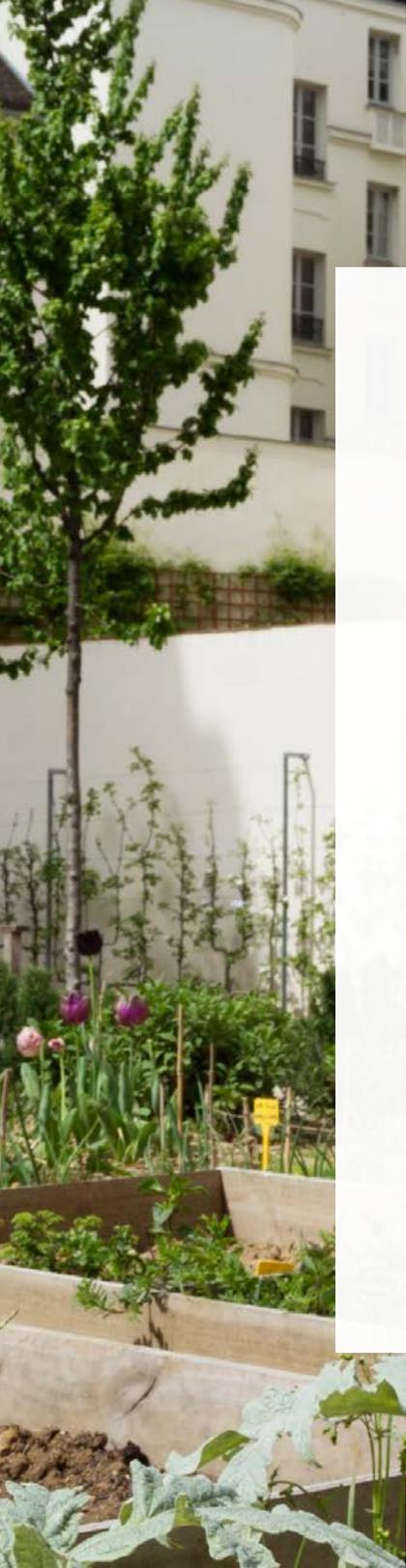
MEMBERSHIP FEES

An important part of your land use agreement with your garden tenants, if applicable, will be plot rental costs/participation fees.

Many community gardens use membership dues and/or garden plot lease fees for part of the operating cost of the garden. Fees charged should be in line with incomes in your particular neighborhood and may vary from place to place. Some gardens charge a nominal \$25 per plot lease fee, while others charge upwards of \$100 per plot. What is included in the lease fee varies as well. Some community gardens include seeds and the free use of garden equipment, free attendance at garden workshops and other types of assistance. If fees will be required, you must determine how they are to be paid, and be sure the pertinent language is written into a membership/rental agreement.

Sample agreement templates, courtesy of American Community Gardening Association, are available [here](#).

FUNDRAISING AND GRANTS



Many urban agriculture projects get off the ground through fundraising campaigns and online crowd funding through [gofundme.com](#), [kickstarter.com](#), or other similar websites. When first getting started, a direct appeal fundraising campaign can be very effective. Once up and running, fundraising events that take place in the garden serve the dual purpose of raising money and awareness. Effective garden-centered fundraisers include plant sales, temporary farm stands, fall festivals, etc.

Monetary donations may be useful in funding your garden project. A good place to start your search for grant support is on the American Community Garden Association website's [funding page](#).

Local foundations and Community Development Block Grants administered by counties and cities can also be sources of funds. Investigate funding options and existing programs administered through community organizations, Extension services, local municipalities, and county governments.

Montgomery County, PA offers a grant program to implement projects that further the goals of its 2040 Strategic Plan. Information can be found [here](#).

You might also ask local service organizations like the Rotary Club for both funding and volunteers.

Many foundations and organizations look for projects to fund, with some specializing in environmental, agricultural, educational and community development projects, any of which may fit your project. A good place to start looking is the RFP (request for proposal) tab on the [Philanthropy News Digest website](#), and the related site, [Foundationcenter.org](#). [Note: Your local library or school may have access to these sites, which do charge a fee for detailed information on funding sources.] You can also search the websites of individual foundations that you may have heard of to see if your project fits with their funding interests.

IN-KIND DONATIONS

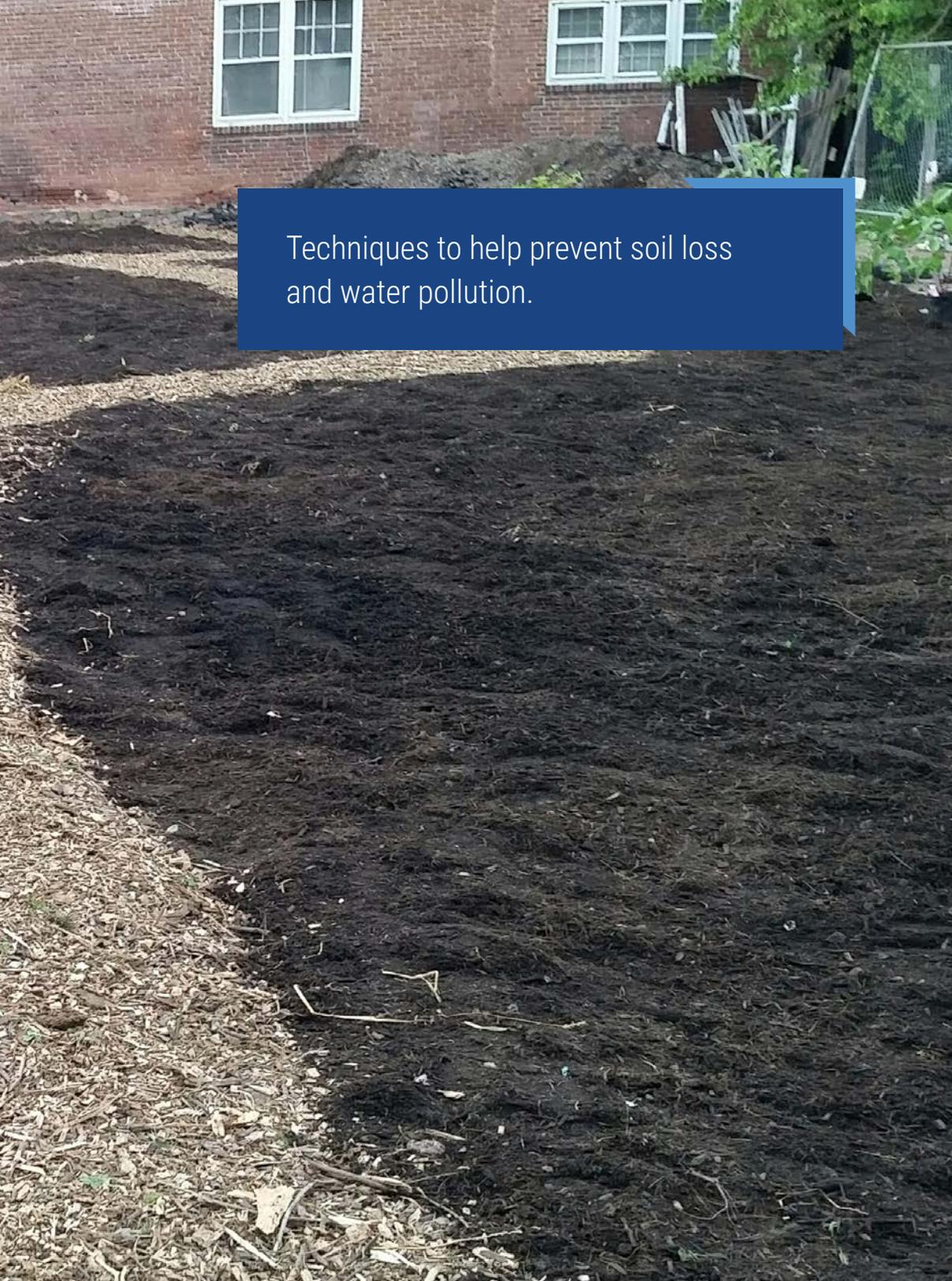
Many community gardens rely heavily on in-kind donations, which most often comes in the form of volunteer time.

Some gardens secure direct donations of soil, mulch, lumber, seeds, plants, tools, benches, and other needed items from local businesses and organizations. Any donation of services or materials can be deemed an in-kind donation. So be sure to track the value of all such contributions; they can be counted as “matching funds,” which are helpful to note in grant applications to show you have already gained local community support.

DESIGNING AN URBAN GARDEN



SITE PREPARATION



Techniques to help prevent soil loss and water pollution.

Topsoil is a very valuable resource, and it is important to preserve for both the garden as well as the environment.

Erosion control measures include:

Mulching: the use of organic material applied on the surface of soil around plants. Can be bark, wood chips, straw, or compost.

Cover crops: a crop grown in soil after the regular garden season is over. Helps to keep nutrients in the soil, prevent erosion over winter, and reduce weed growth.

Plastic mulch film: plastic sheeting used as a soil covering, which not only prevents erosion but can conserve water and prohibit weed growth.

A buffer strip: A strip of permanent grass to prevent soil runoff from erosion.

No-till gardening: the practice of not tilling soil prior to planting. Holes are dug for each plant instead of turning the soil of the entire garden.



In urban areas, there are significant impervious areas—paved surfaces that prevent water infiltration.

STORMWATER MANAGEMENT

Roads, driveways, parking lots, rooftops, and other surfaces that prevent water from soaking into the ground greatly increase the volume of runoff that is created during storms. This runoff picks up pollutants and transports them into our stormdrains and, all too often, directly into waterways. Runoff can also cause erosion and wash the topsoil from our gardens if its volume is too high and not properly managed.

Gardens provide a great opportunity to capture rainwater and enable it to infiltrate into the soil, rather than running off the land. Collecting rain and stormwater runoff in rain barrels or cisterns, as well as constructing raingardens to collect and infiltrate rainwater can effectively manage stormwater while also providing benefits to the garden.

More information is available through the [EPA](#), [Penn State Extension Services](#), and [StormwaterPA](#).

WILDLIFE CONTROL

A young deer with white spots is grazing in a grassy area. The background is blurred, showing green foliage and a grey structure.

Beneficial wildlife is welcome in our urban gardens, yet some critters can become a nuisance and should be excluded for the success of the garden and the safety of its members.

Rabbits, deer, raccoons, squirrels, chipmunks, voles, groundhogs, possums, skunks, and woodchucks are just a few of the animals that can wreak havoc in your garden—not only do they destroy crops, they also have the potential to carry disease.

A fence can help exclude some of these animals, but many can climb over or dig under to seek the delicious vegetables and fruit you've worked so hard all season to grow. Managing brush and compost piles can help deter pests. Other strategies include:

- Buried fencing with adequate size mesh
- Scarecrows, shiny streamers, or other visual deterrents
- Noise effects such as poppers or a predator soundtrack
- Chemical repellants applied to the plants
- Trapping and relocation
- Off-site composting

For additional guidance on wildlife control, check out this [link](#).

Keep in mind that there are regulations regarding wildlife management.

GARDEN MODELS

Urban gardening varies from traditional farming in many aspects, a main difference being availability of good quality soil and planting ground.

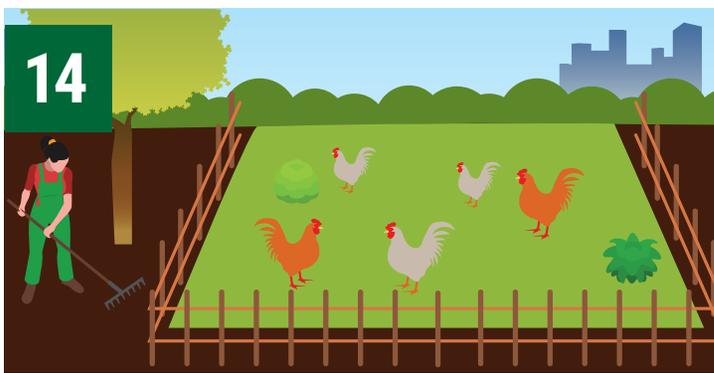
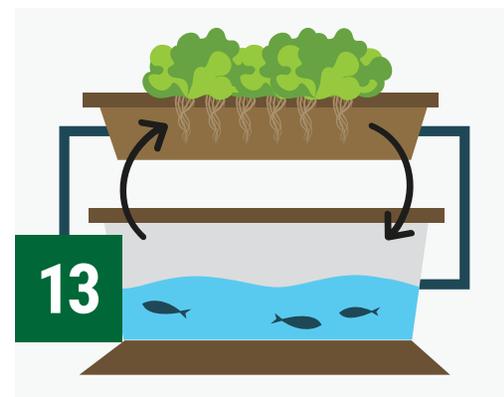
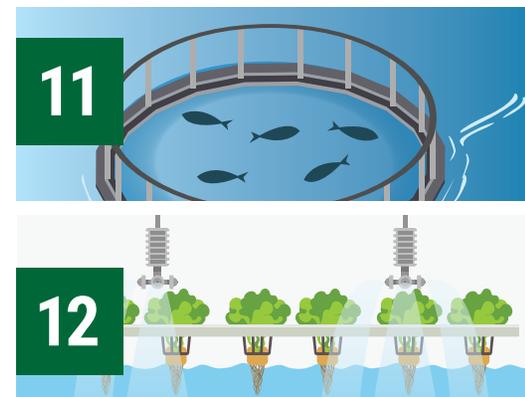
Urban gardening can present challenges in terms of space and the availability of the required resources, but it also lends itself to many kinds of alternative and innovative gardening approaches. Garden plant species can vary widely—from traditional veggies to herbs, flowers, and even fruit-bearing trees.

Interactive Garden

Featured on the following page is an interactive illustration of 15 garden types to consider, along with resources that provide an in-depth look at each.



Click the numbers for the garden model description



OPERATIONS



GARDEN PLANTING



Planting native species of plants is far superior to non-native species. Natives are well adapted to grow in our climate, and they provide better resources for pollinators. Non-natives tend to outcompete native species and do not provide the necessary habitat for pollinators and beneficial wildlife.

[Penn State's gardening guide](#) provides a great resource for all things "vegetable gardens."

GARDEN PLANTING

Planting

Garden success starts with proper seed or plant selection and planting. Plants can be a more time-effective way to establish a garden, but they are also more costly. Seeds can be started inside, are the most inexpensive approach, and provide a great educational experience that enables students to literally “see the garden grow,” from seed through harvest.

Penn State Extension publishes a very comprehensive guide with instructions and timelines for planting most common vegetables. To access a PDF of the guide, follow this [link](#).

There are a variety of planting techniques to consider, so take a look and determine which makes the most sense for your garden:

Succession planting involves replacing a short-season spring vegetable with one that will benefit from the mid-summer heat or late season into fall. Read more [here](#).

Companion planting combines two varieties of plants in the same plot to benefit both and improve yields. For example, tomatoes are repellent to diamondback moth larvae, which are caterpillars that chew large holes in cabbage leaves. Read more [here](#).

Cover cropping, as described on page 32, protects soil from erosion and compaction in winter by planting a living cover. Along with soil protection, this technique can conserve nutrients and increase organic matter, providing food for the micro-organisms that make up the living component of soil. Read more [here](#).



Timing is Everything

START SEEDS INDOORS			PLANT SEED/TRANSPLANT								HARVEST	
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
			BEANS									
		BEETS					BEETS					
	BROCCOLI					BROCCOLI						
		BRUSSEL SPROUTS										
		CABBAGE				CABBAGE						
		CARROTS				CARROTS						
	CAULIFLOWER					CAULIFLOWER						
		CORN										
		CUCUMBER										
		KALE					KALE					
		LETTUCE					LETTUCE					
		ONIONS										
	PEAS						PEAS					
		PEPPERS										
		SPINACH					SPINACH					
		SQUASH										
		TOMATO										



GARDEN PLANTING

Seeds and Plants

Seed starting: Most vegetable plants can be grown from seed, as opposed to being purchased as plants. Starting seeds indoors several weeks before the outdoor growing season begins is a cost-effective, money-saving way to kickstart your garden. Consult this [growing guide](#) to determine when to begin and how to plant.

Heirloom varieties: Heirloom plants are varieties that have been selected for their flavor, resistance to pests and diseases, and other traits important to home gardeners. Unlike modern hybrids, heirloom seeds are open-pollinated, which means they will breed true and their seeds can be saved by the gardener from year to year. Read more [here](#).

GARDEN PLANTING

Southeastern Pennsylvania Planting Chart

 <p>Asparagus From crown after last frost</p>	 <p>Brussels Sprouts Transplant after last frost</p>	 <p>Celery Transplant after frost or seed Sep 1-30</p>	 <p>Green Beans Seed after last frost</p>	 <p>Potatoes Seed after last frost</p>	 <p>Tomatillos Transplant after last frost</p>
 <p>Lettuce *Seed Mar 1-Apr 30/ Aug 1-Sept 1</p>	 <p>Rhubarb From crown Mar 1-April 15</p>	 <p>Peas Seed Mar 15-April 15</p>	 <p>Beets *Seed Mar 15-April 30/ Jul 1-Sept 15</p>	 <p>Broccoli *Seed Apr 1-15/ Jun 15-Jul 10</p>	 <p>Carrots Seed Apr 1-Jul 10</p>
 <p>Cauliflower Seed Apr 1-15/ Jun 15-Jul 10</p>	 <p>Onions Transplant or seed Apr 1-Apr 15</p>	 <p>Radish Seed Apr 1-Sept 1</p>	 <p>Cabbage Seed Apr 15-May 20/ Jun 15-Jul 1</p>	 <p>Corn Seed May 1-July 1</p>	 <p>Cucumber Seed or transplant May 1-Jun 30</p>
 <p>Melons Transplant or seed May 1-Jun 30</p>	 <p>Tomatoes Transplant May 5-June 1</p>	 <p>Eggplant Transplant May 15-Jun 5</p>	 <p>Peppers Transplant May 15-Jun 10</p>	 <p>Squash Transplant or seed May 15-Jun 15</p>	 <p>Pumpkin Seed May 20-Jun 20</p>

Date of last frost in Southeastern PA generally falls around 5/15

*Date ranges indicate range of planting. Some plants may have both a Spring and Fall planting. For more detailed planting information, click [here](#).

Crop Rotation

Planting the same plants in the same location year after year encourages pests, disease, and depletes nutrients in the soil. To avoid these problems, it is necessary to rotate crops every three or four years. In other words, if you plant tomatoes in one spot, you should not plant them in the same spot for more than three to four years.

This can be difficult to maintain in a community garden, as plots are often planted by different people each season. Maintaining a card file with a map of each plot from previous seasons for the next gardener is a great way to track the garden layout and make sure rotation occurs. Read more [here](#).

Fertilizing

As discussed earlier, healthy soil is the foundation of a healthy garden. Soil testing should go beyond contaminants to determine nutrient levels, pH, and then fertilizer requirements. Soil tests can be purchased for \$9.00 through your county's Penn State Cooperative Extension office, as well as through independent labs.

Keep in mind that any nutrients, fertilizers, or herbicides should be applied in the appropriate amount and at the right time. Excess from over-application will wash away in runoff, presenting a hazard to water quality, especially if application is made right before it rains. More is not better when it comes to nutrients, so only apply the amount recommended by soil test results. Plants will only use what they need!

See also Composting on page 45.



GARDEN MAINTENANCE

Weeding

Keeping up with the weeding in a community garden is an ongoing challenge. If weeds are allowed to run rampant, they will outcompete the planted species and your garden will fail. In community gardens, individual gardeners are expected to keep their plots weed-free, and common areas such as walkways and around fencing should also be kept clear of weeds. Setting, posting, and enforcing rules for maintenance will prevent headaches down the road.

Many community gardens accept help from outside volunteers for clean-up days and service projects, but be sure to help well-meaning volunteers understand the difference between a weed and a plant you are growing intentionally! Labeling plants and close supervision of volunteers will help.



GARDEN MAINTENANCE

Composting

Composting allows garden materials and other organic waste to be recycled and then added back in to the garden as nutrient-rich topsoil. It also reduces waste in to landfills, reduces the need for commercial fertilizers, and helps improve the soil's ability to retain water. A compost collection site is a great part of every garden, but note that perennial weeds and diseased plants should not be added, as they can be spread with the compost.

Healthy compost maintains an ideal balance between "green" (nitrogen-rich) and "brown" (carbon-rich) materials. As a rule of thumb, there should be one third green and two thirds brown. Too much nitrogen will produce a smelly, dense, slowly decomposing compost. When in doubt, add more carbon sources.

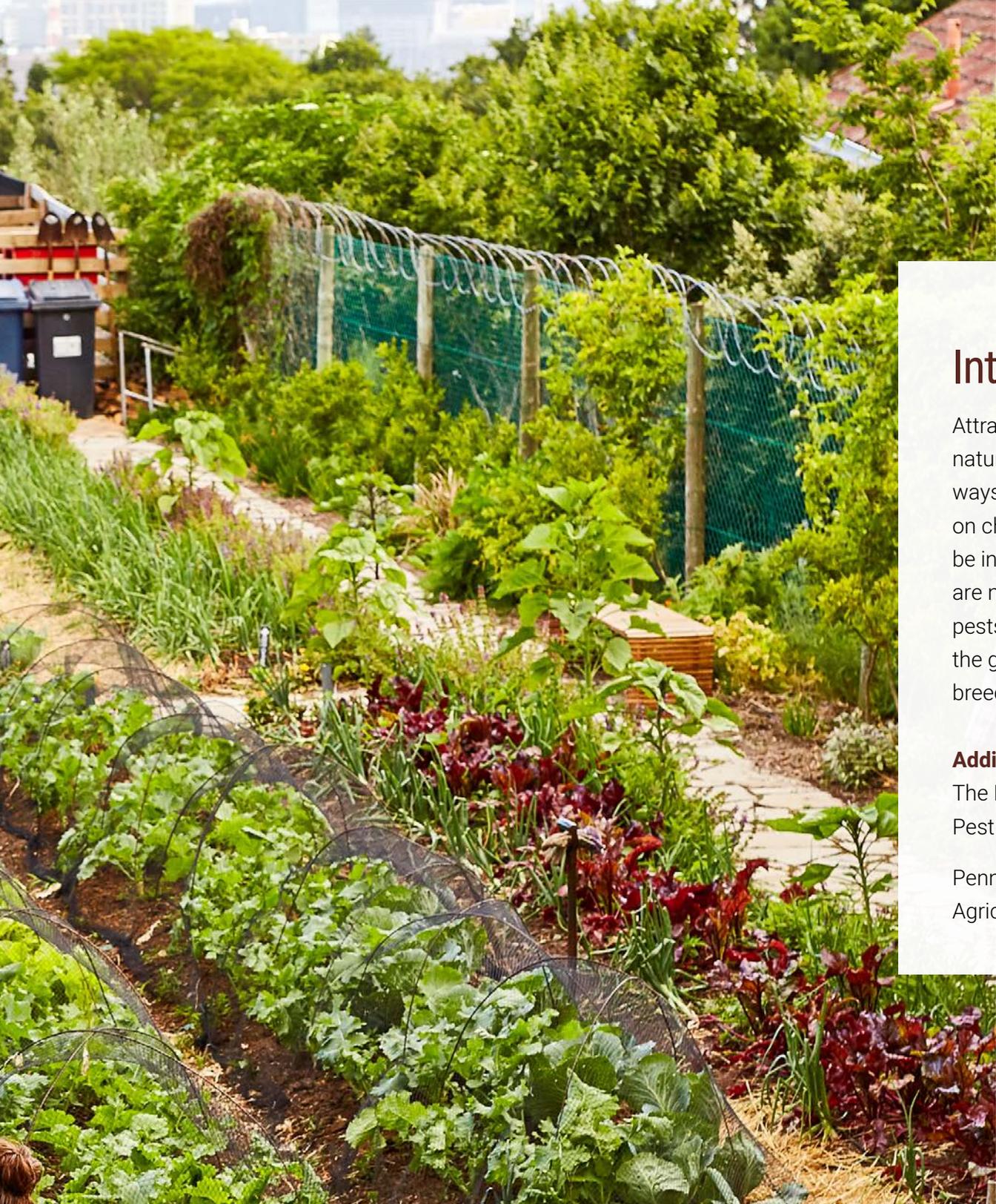
Carbon-rich matter includes branches and stems, dried leaves, peels, chopped or shredded wood, sawdust, corn stalks, coffee filters, conifer needles, egg shells, and straw.

Nitrogen-rich matter includes non-meat manures, food scraps, green lawn clippings, and green leaves. Meat and dog waste should not be added to compost piles.

Composting bins can be on-the-ground piles or enclosed turnable bins. Considerations include adequate drainage and maintaining proper temperature. Enclosed bins will produce finished compost sooner, due to the ability to turn the materials as well as the increased temperature. Enclosed bins are also ideal for use in urban gardens, as they keep pests such as rodents and nuisance wildlife out and reduce odor.



The Montgomery County Conservation District has created a great fact sheet on Composting available for download [here](#).



GARDEN MAINTENANCE

Integrated Pest Management

Attracting beneficial insects, birds, and bats using natural repellants and practicing crop rotation are all ways to limit unwanted pests while reducing the reliance on chemicals. Bat boxes, bird feeders, and beehives can be installed. Planting marigolds and citronella, which are natural repellants, is a simple way to help control pests and beautify a garden at the same time. Keeping the garden free of standing water will also help prevent breeding of mosquitos.

Additional information:

The NRCS has published a great leaflet on Integrated Pest Management and Wildlife. It is available [here](#).

Penn State Extension has detailed information on IPM in Agriculture available [here](#).

HARVESTING & YEAR-END WRAP UP



HARVESTING & YEAR-END WRAP UP

The most rewarding time of year for a community garden is perhaps harvest time, when everyone comes together to celebrate a successful season and reap the benefits of their hard work. Canning, freezing, drying, or dehydrating are great techniques for preserving foods grown in the garden for use in the off-season. Often community organizations offer classes in preserving home grown produce, which is a great way to end the season and keep the community engaged. A guide for home gardeners can be found [here](#).

It is very important for the health of your garden to clean it up after the growing season. Leaving dead plants and rotting vegetables on your plot invites insects and fosters diseases, which can damage next year's crops. Always remove and compost the plants; make necessary repairs in the garden, such as fixing broken fences and replacing rotted boards; and conduct the required maintenance or winter storage routines for rain barrels and other facilities. And don't forget to clean and dry your garden tools before storing for the year.

As previously discussed, planting cover crops after harvest is a great strategy to protect the garden's soil over winter.

The end of the growing season is also a great time to do an evaluation of the past year's success. Use the off-season to survey the gardeners about their experiences, recruit new members, put together educational programming and collaborations, and plan for an even better season the following year.





PLANTING SEEDS FOR SUCCESS:
Turning vacant lots into productive community space is a win-win for all

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