

VACANT LAND TREATMENT GUIDES

Vacant land in cities can be a destabilizing force, attracting illegal dumping and crime as well as diminishing property values. Vacant land can also create unprecedented opportunities for residents to build social, environmental, and economic capital. In an effort to understand and harness the potential of vacant urban land, the enclosed Vacant Land Treatment Guides were developed through trial and error by Ashley Atkinson in collaboration with many individuals and organizations in Flint and Detroit (Michigan) between 1999 and 2014. Each guide contains a treatment description, project steps, specifications for land tenure, location, soil and water requirements as well as recommendations for supplies and equipment, planning, implementation, and on-going care.

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CLEAN + CLEAR

A clean and clear treatment is the first step to beautifying an abandoned vacant lot that contains debris and litter. Cleaning up a vacant lot not only removes an eyesore from your community, but it promotes the improvement of other lots and discourages illegal dumping. The strategy for cleaning and clearing lots varies at each site and depends on the features of the lot, but often includes clearing fence lines or pruning trees and shrubs. Cleaning and clearing is a treatment in itself, but also provides a clean slate preparing the site for other future projects. It requires little maintenance other than removing any additional litter and keeping it mowed, but makes a big difference in your community!

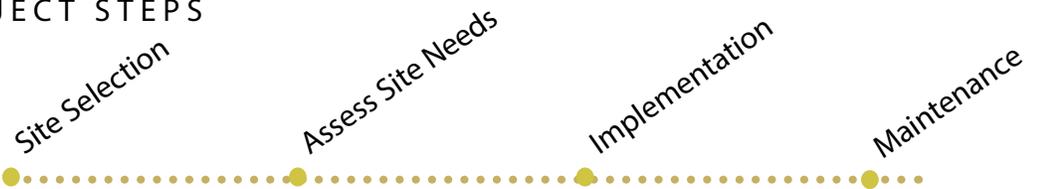
BEFORE



AFTER



PROJECT STEPS



LAND TENURE

- Find out who owns the property and contact them before beginning work. The owner is liable for all activities on the lot. Your group's actions and communication may push them to contribute resources to help!
- Track the work you do by taking before and after pictures, keeping records of how often you clean or mow and copies of any expense receipts. If it is a city-owned lot, submit an Adopt-a-Lot form annually. These steps will support your case if in the future you decide to do a more advanced treatment and want to purchase the property.

IDEAL LOCATION

- Prioritize lots that have a large amount of dumping, are dangerous or highly visible, near parks or other areas where children play, or along walking routes to schools, businesses and other institutions.

SOIL REQUIREMENTS

- Any soil type.

WATER REQUIREMENTS

- No water source is needed for cleaning and clearing.

CLEAN + CLEAR

SUPPLIES & EQUIPMENT

Needs will vary depending on the type of work needed, but may include:

- Heavy duty contractor trash bags
- Yard waste bags
- Gloves and eye protection
- Shovels
- Wire cutters
- Sawzall with metal cutting blade
- Loppers or pruning saws

- Lawn mower
- Chainsaw (if a trained operator is present)
- Dumpster (optional)
- Paint and recycled wood or particle board (optional)

PLANNING

- After you and your community members decide which lot(s) you want to clear, assess what work needs to be done, how many people you need, and what equipment is needed.
- Set a day to clean and clear the lot(s). Check the city's bulk trash pick-up schedule. Plan your cleanup date accordingly to avoid spending money on a dumpster.
- Promote your event to recruit volunteers!
- Motor City Makeover, an annual community volunteer effort in May is a good time to kick off a cleaning campaign. Resources such as gloves and trash bags may be available from the city.

IMPLEMENTATION

- Pick up trash and debris from the lot. Identify items that may be recycled or reused, such as concrete pieces or bricks to edge garden beds, or tires to use as flower planters (we don't recommend growing food in tires).
- Trim and stack piles of brush neatly in the curb for bulk pickup.
- Visibility is important in preventing future dumping and increasing safety; if existing trees have low-hanging branches, cut them so all branches are at least 7 feet from the ground. Prune back and shape shrubs if needed.
- Assess any chainlink fencing, if it's in poor condition, trapping litter and weed trees, and no longer serving a purpose, removing it can make the space feel more open and safe. First take down the fencing from the posts and roll it up. A sawzall can be used to cut the posts at the ground, or the concrete posts can be dug up. You should get permission from the owner before fence removal.
- When finished, mow the grass on the lot. This can be combined with the Creative Mowing treatment.

RESOURCES

Bulk Dropoff Locations
Call for hours and regulations
(313) 893-3388

- 8221 West Davison
- 12255 Southfield Service Dr.
- 5840 Anthon
- 19715 John R
- 6451 E. McNichols

Recycle Here!
1331 Holden Ave
Wed. 10-6pm; Sat. 9-3pm
(313) 871-4000

Wayne County C.L.E.A.N. Program
Apply for dumpsters and/or waste removal support
(734) 326-4437

Wayne County Resource Recovery Guide. Find out where to recycle tires, electronics, and other items.
(734) 326-3936
<http://www.waynecounty.com/1066.htm>



ON-GOING CARE

- Check for debris and remove as needed.
- If littering or dumping continues, think of creative ways to prevent these activities. Ideas include installing posts 3 to 4 feet in height that are staggered to prevent vehicles from entering a lot.
- Consider adding artwork, which not only adds character to your neighborhood, but can help deter dumping by showing that the lot is being watched and cared for. Try setting out an easel with signage or do creative board ups on neighboring vacant houses with pieces of art.
- Work with neighbors to keep an eye on the lot. Anytime you see dumping, take down license plate number and record dates and times of offenses. Call the City's Environmental Enforcement Dept. to report: 313-876-0974.

Vacant lot treatment guides in the series include clean + clear, creative mowing, cut flower stand, tree stand, tree nursery, community garden, market garden, orchard, native planting, and pocket park. Treatment guide appendices for cut flowers, trees, orchards, native plants, and hardscape are also available. For more information contact Keep Growing Detroit at keepgrowingdetroit@gmail.com.

CREATIVE MOWING

Creative mowing is a simple and short-term option for improving vacant overgrown lots. Sometimes it makes sense to mow an entire lot front to back, but that's not always feasible to do for every vacant lot in your neighborhood. It can help you cover more ground, while spending less time and money and in some cases creating habitat for birds and beneficial insects. Creative Mowing shows that someone is maintaining the land, which can discourage littering, dumping, or other illegal activities.



PROJECT STEPS



LAND TENURE

- You do not need to purchase or lease the lot, however it's a good idea to keep records of any maintenance you do (photos, logs, receipts).

IDEAL LOCATION

- Any lot with grass can be used for this treatment. Target contiguous vacant lots that are along walking or driving routes.

SOIL REQUIREMENTS

- Any soil type is acceptable for creative mowing.

WATER REQUIREMENTS

- Access to water is not needed for this treatment.



CREATIVE MOWING

SUPPLIES & EQUIPMENT

- Lawn mower
- Weed Wacker
- Fuel
- Trash bags
- Work gloves and eye protection
- Broom
- Marking paint (optional)
- Stakes & string (optional)

PLANNING

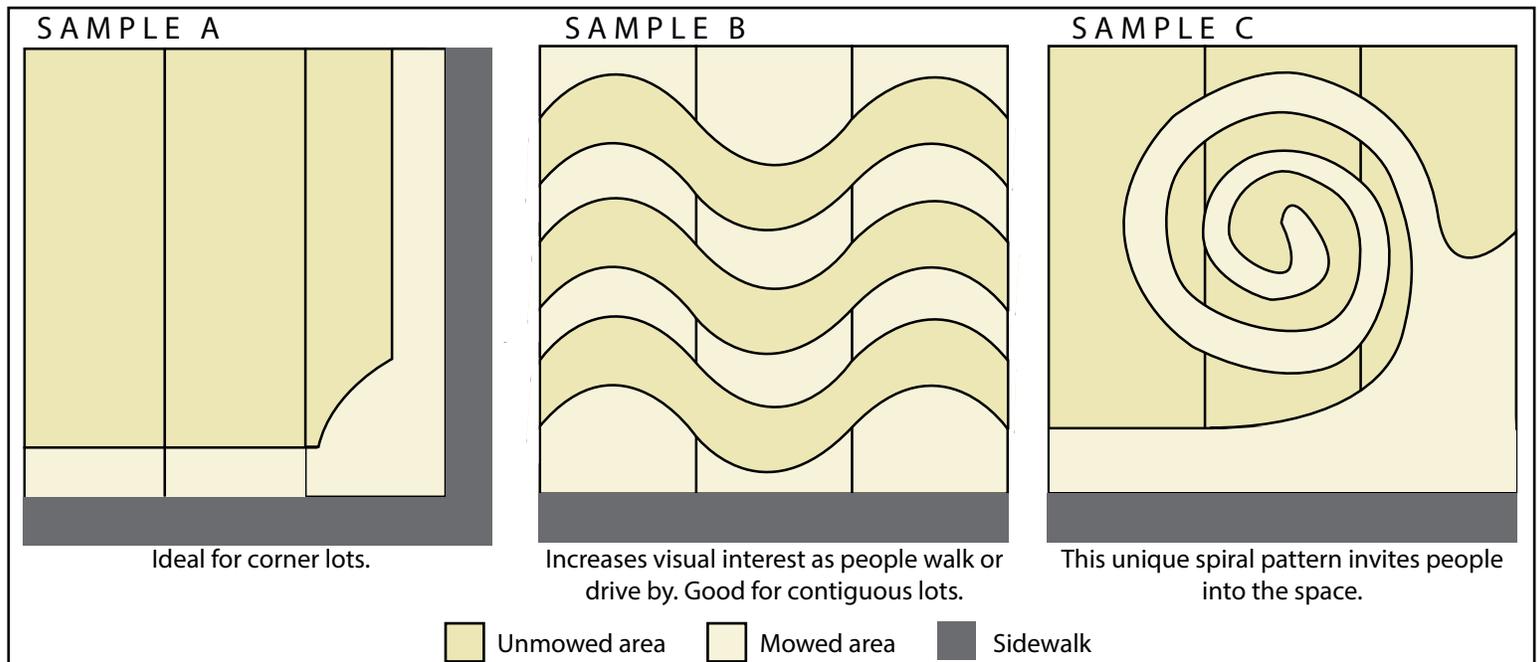
- Identify the lot(s) that need mowing. Mowing multiple, contiguous vacant lots can have a greater effect than a single lot.
- Be creative and make a mowing plan! Think about the width of the mower when considering different shapes.
- Always mow at least the berm (between the sidewalk and the street) and 6 feet back from the sidewalk, which visually creates a pattern.
- Try mowing in different directions to create new textures in the grass.
- Mowing can be a useful skill for youth to learn. Make this an educational opportunity for them to learn basic lawn and lawn mower maintenance.
- If the design is complex, marking out the design with marking paint or stakes and string may be helpful.
- Incorporate existing trees into your plan and highlight them with the mowing.

IMPLEMENTATION

- See the Clean + Clear treatment guide for instructions on preparing the lot(s) for mowing.
- Mark out the mowing design if necessary.
- Mow the grass! Mowing in the morning or evening and on dry grass is best for the health of the grass.
- Sweep the sidewalks wherever there are grass clippings to make the lot(s) look neat.

ON-GOING CARE

- Weekly maintenance: During peak growing seasons from May to June and late August to October, mowing may be required once a week. Check for debris and remove.
- Monthly maintenance: During the dormant season from late June to mid-August, mowing is required about once a month, but depends on rainfall.



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CUT FLOWER STAND

A cut flower stand is a great way to earn some money while beautifying your neighborhood! Locally grown cut flowers are a specialty item and can be sold in a variety of places including farmers' markets, directly to florists or caterers, or in a Community Supported Agriculture (CSA) program. Some flowers, such as sunflowers, can be sold by the stem, however, most flowers are sold as bouquets. Flowers can also be sold as wreaths, bouquets of dried flowers, or edible flowers. A cut flower stand is generally an annual treatment which means flowers must be replanted every year. This leaves room to learn and experiment with different varieties every year!



PROJECT STEPS



LAND TENURE

- Ownership is not required for a cut flower stand since it is an annual project.
- A permit or lease with the owner of the lot is recommended.

IDEAL LOCATION

- The size of the stand depends on the desired workload.
- A sunny, highly visible location is beneficial for the plants as well as the surrounding community.

SOIL REQUIREMENTS

- Well-drained, loamy, and slightly acidic soil is ideal.

WATER REQUIREMENTS

- Having water on site is recommended because flowers require 1 inch of water per week.
- An irrigation system can be installed using drip tape or a sprinkler. Drip tape is ideal because it prevents water from landing on blossoms which causes disease and rotting.

CUT FLOWER STAND

SUPPLIES & EQUIPMENT

- Compost
- Seeds or transplants
- Shovel
- Rake
- Trowel
- Hand pruners
- Rainbarrel or hose
- Buckets
- Sod-kicker (optional)
- Tiller (optional)
- Straw (optional)
- Drip tape (optional)

PLANNING

- If planting transplants or perennials, lasagna beds (layers of cardboard, compost, and leaves) can be made in the fall that will be ready for planting in by spring. Do not seed directly into lasagna beds!
- When deciding what to plant, keep in mind that bouquets typically contain three types of flowers: spiky, showy, and filler. An example of a spiky flower is *Liatis*, while Thai Basil, a very fragrant herb, is an option for a filler flower. Zinnias are very common showy flowers and are easy to grow. See the Cut Flower Appendix for more recommendations and details on specific varieties.
- After flower varieties are chosen, create a planting plan. Keep flower beds at least five feet from all property lines and ten feet from roads and sidewalks. This will help to create a buffer from vehicle and pedestrian traffic and keep plants healthy.
- Order seeds as soon as possible for the best selection.
- For creating bouquets, flowers with long stems are more versatile. Flowers with short stems, like the delicate Larkspur, are not ideal for arrangements but could be sold individually as bud vase flowers.
- If planting sunflowers, plant additional seeds every two weeks. Planting in successions helps to reduce risk of disease spreading among flowers and ensures continuous blooms for harvest and sale.

IMPLEMENTATION

- Follow directions on seed packs for individual flowers. Many flowers need to be started indoors in February or March and transplanted outdoors after the last frost.
- To prepare soil, remove sod using a shovel or sod-kicker. If desired, leave strips for walking paths. Till or loosen the soil 8 to 12 inches beneath the surface. Add compost or other amendments. A soil test will help determine what's needed.
- Plant seeds and transplants according to the planting plan. If desired, add straw to help retain moisture.
- Be sure to water immediately after planting.
- If installing drip tape, two rows of flowers can share a tape. A tape diameter of $\frac{1}{2}$ inch with 6-9 inch spacing is ideal. The drip tape should be connected to your water source, either a rainbarrel or a hose.

ON-GOING CARE

- Daily maintenance: After seeds are planted but before emergence from soil, check daily to ensure they have enough moisture. On hot days daily watering may be necessary.
- Weekly maintenance: After plants emerge from soil, they should receive about 1 inch of water per week by totally soaking the root zone twice a week. Watering early in the day is ideal. It is a good idea to observe soil moisture and plant behavior to learn about plants' water needs. While plants are less than six inches tall, weeding is especially important. Flowers will most likely out-compete weeds past this height. Keep an eye out for vining weeds, as they pose the biggest threat. Debris should be removed weekly and diseased plants should be removed as soon as possible to prevent disease from spreading. Deadheading, the removal of old flowers, helps to ensure flowers bloom as long as possible. Use hand pruners to cut off old flowers.
- Harvest: Cut flowers before morning dew has dried or in the early evening. Using hand-pruners, make the cut on an angle and place in a bucket with water immediately. This technique helps increase water absorption which preserves flowers.
- After harvest: Proper storage conditions are important to the vase life of flowers; keep out of the sun and in low temperatures with plenty of water. Flowers can be stored in water or a preservation solution to help extend vase life. Leaves left on the stem should remain out of the solution.
- End of season: Remove plants and put beds to rest for the winter by covering with chopped or shredded leaves or straw. Drip tape should also be removed and stored for the winter.

TREE STAND

A tree stand is a simple treatment consisting of a small number of tightly-spaced trees planted on a vacant lot. Not only can tree stands add beauty and interest to your community, they can improve air quality, create shade, and facilitate stormwater management. When planted strategically trees in stands can also create natural barriers on vacant lots, decreasing the incidences of dumping and other illegal activity. Trees take about three years to become established in their new environment and will beautify your community for years to come. Split-rail fencing or landscaping with flowers or shrubs adds extra curb appeal.



PROJECT STEPS



LAND TENURE

- Legal ownership, a lease or some form of standing is recommended since trees are a long-term treatment.

IDEAL LOCATION

- At least one full lot (30 by 100 feet). Multiple lots will accommodate more trees.

SOIL REQUIREMENTS

- Fertile, well-draining soil to accommodate growth of tree roots.

WATER REQUIREMENTS

- A water source should be located close by because trees need to be watered weekly for the first three years.

TREE STAND

SUPPLIES & EQUIPMENT

- Trees
- Mulch
- Tree Guards
- Shovels
- Wheelbarrows
- Pitchforks
- Pick Axes
- Buckets
- Tree watering bags (optional)

BEFORE



AFTER



PLANNING

- When creating your planting plan, consider how the placement of trees might prevent or encourage certain activities from occurring on the lot. If residents often walk through the lot, consider planting trees around the existing path to accommodate foot traffic.
- Choose tree species that thrive in urban environments. These trees are better able to deal with poor soil conditions, road salt, and pollution found in urban areas. See Tree Appendix for details on specific types.
- Trees native to the area tend to be more resistant to climate, diseases, and pests. They also require less maintenance and replacement, which makes them great planting choices. Be sure to diversify the species you choose to plant.
- Adding fencing or native flowers can add extra curb appeal to the tree stand. See the Hardscape and Native Plant appendix for details.
- Create your planting plan, placing trees at least 15 feet apart and 15 feet away from sidewalks, roads or buildings.
- Trees can be planted either in fall or spring. Order trees two months in advance from a recommended source in the Tree Appendix.

ON-GOING CARE

- Weekly maintenance: From April to October in year 1 water once a week giving each tree 5 gallons. Trees are dormant from November to March and therefore do not need to be watered. In year 2, watering can decrease to 5 gallons every other week from April to October. Replace mulch as needed.
- Yearly maintenance: In year 3 and beyond watering is only necessary during droughts. Check the site for mowing and weeding needs. Pruning is only needed when branches appear to be dead or diseased. Trees that are leaning should be staked to promote upright growth.

IMPLEMENTATION

- Balled and burlapped or containerized trees between 1 and 2 inches in diameter are ideal for Tree Stands. Be sure to keep tree roots moist prior to planting.
- Plant trees according to the planting plan. See the Tree Appendix for planting ball and burlapped trees.
- Once the hole is filled in, top with 2 to 3 inches of mulch. Follow instructions in the Tree Appendix for proper mulching.
- Give each tree 15 gallons of water after planting. Water slowly so the water soaks down into the roots.



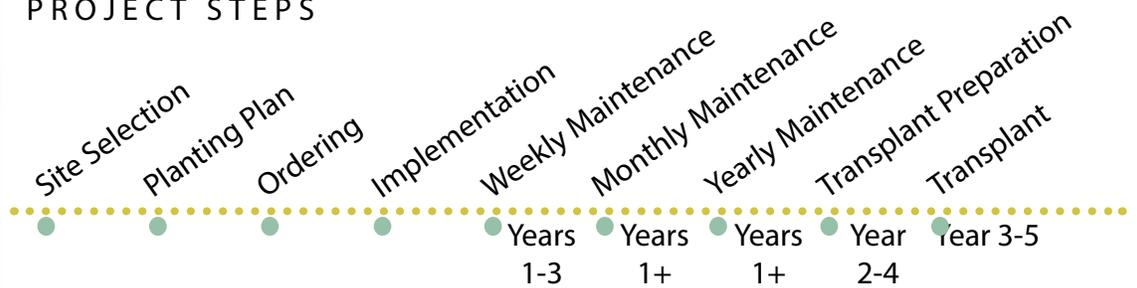
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TREE NURSERY

Tree nurseries are an exciting opportunity to beautify vacant lots in your neighborhood in the short term and improve environmental quality and increase the tree canopy in your community in the long-run. Young trees are planted and allowed to grow for three to five years in the nursery. They are then harvested and permanently re-planted as street trees or in public areas like parks in your community. Planting trees grown in urban nurseries increases survivability after transplanting because the trees are already acclimated to urban soil and conditions. Trees can also be sold, however the nursery must be certified by the State of Michigan.



PROJECT STEPS



LAND TENURE

- Trees grow in the nursery for 3-5 years before harvest, so legal ownership or a lease is recommended.

SOIL REQUIREMENTS

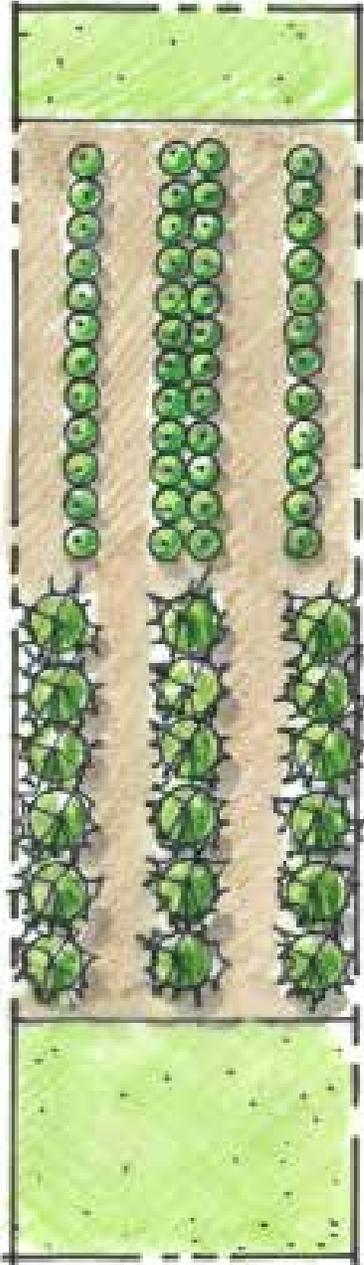
- Well-drained soil.
- Soil that is not compacted.

IDEAL LOCATION

- At least one full lot (30 by 100 feet) to hold a maximum of 75 trees.
- Avoid areas subject to flooding, which weakens trees and increases the chance of disease and insect problems. Vacant lots experiencing seasonal flooding are manageable, however tree species should be chosen accordingly.
- The lot should be relatively free of large rocks and other large debris. Check for buried sidewalks or driveways.
- Sites with a slight slope are ok, but major slopes and hills should be avoided.

WATER REQUIREMENTS

- Close access to water is necessary because watering is required once a week from April to October.
- An irrigation system, such as drip tape, may be necessary if soil is very sandy, as sandy soil has low water-holding capacity.



TREE NURSERY

SUPPLIES & EQUIPMENT

- Trees
- Mulch
- Tree guards
- Tiller
- Shovels
- Pitchforks
- Loppers
- Rainbarrels (optional)
- Wheelbarrow
- Lawn mower
- Perennial flowers (optional)

PLANNING

- Start small with your tree nursery to make sure you can handle the workload. If you have success maintaining the trees in the first and second years, consider expanding.
- Choose a variety of species to promote a diverse tree canopy. The Dutch Elm Disease and the Emerald Ash Borer reduced Michigan's tree canopy severely because too many of the same species were planted. It is important to note that some varieties can not tolerate salt and pollution. See the Tree Appendix for recommended varieties.
- Leave original nursery tags on or mark each tree with its species and variety to make transplanting easier. Vinyl tags with metal wire are a good option.
- If including perennial flowers, see the Native Plant Appendix for suggested varieties.
- By planting evergreen trees, you can create a Christmas Tree Farm. These trees are mature when they reach 6 to 7 feet, which may take 7 to 10 years. Good varieties include Balsam Fir, Douglas Fir, Fraser Fir, Noble Fir, Scotch Pine, Virginia Pine, and White Pine.
- Decide what species of trees to plant and create a planting plan. Keep all trees at least 15 feet away from roads and sidewalks. Trees should be planted in rows at least 5 feet apart, with trees spaced at least 4 feet apart within the row to ensure access for maintenance.

IMPLEMENTATION

- Trees for nurseries are called whips and are about 1/4 inch in diameter. They come in containers or as bare-root trees. Bare root trees should be planted within 3 days of arrival so their delicate roots do not dry out.
- Mark out the locations for the trees according to the planting plan.
- To plant trees, see Tree Appendix for a detailed guide to planting bare-root or container trees.
- After trees are planted, give each 5 gallons of water. Mulch according to the instructions in the Tree Appendix.
- Place tree guards on the trees to protect the delicate bark.

ON-GOING CARE

- Weekly maintenance, years 1-3: each tree should receive 5 gallons of water weekly from April to October. Trees are dormant from November to March so they do not need to be watered during those months.
- Monthly maintenance: In all years, weeding should occur as needed so trees are not competing with weeds for nutrients. Trees may need to be staked if they begin to lean. Staking should only be temporary as this may cause the root system to be weakened. Inspect trees for insects and pests, and mow the lot as needed to keep it looking tidy.
- Yearly maintenance: Check trees in the spring for any dead or broken branches and remove them. Corrective pruning can be done after year 1 if needed. Remove any low-hanging branches to make them suitable street trees. See the Tree Appendix for proper pruning techniques. Compost can be added if plants appear to need extra nutrients. If mulch has decomposed, add another 2 to 3 inch layer.
- Transplant: To prepare for transplanting trees, root-pruning, which is breaking the roots around the tree for easier removal, should be done 6 to 12 months before transplanting. Trees should be removed from the nursery when the trunk is 1 inch in diameter, and will occur in the spring or fall of years 3-5. This can be done by hand, however if the trunk grows over 1.5 to 2 inches in diameter machinery will be needed.

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COMMUNITY GARDEN

Community gardens generally focus on growing vegetables but can also include perennial fruit, flowers, honeybees, art, and gathering areas. Working on the garden can bring multiple families, neighbors, church members, and others together, helping to build community. Gardeners can grow and harvest fresh, healthy food for their families and others in need. Community gardens not only make your neighborhood more beautiful, but they can provide wonderful learning opportunities for adults and children alike.



PROJECT STEPS

Community Outreach
Site Selection
Soil Test
Planting Plan
Implementation
On-Going Farm Work
Year-End Clean-Up

IDEAL LOCATION

- Any size lot is suitable. One or more lots can be used to create larger gardens if there is enough interest from the community.
- Most vegetables require at least 6-8 hours of full sun each day.
- Choose an area with a lot of community interest and support including residents nearby who will keep an eye on the site.

WATER REQUIREMENTS

- Vegetables require frequent watering at all stages of growth, so having a water source on-site is ideal.
- Locate the garden where you can use a faucet and hose or hook up a rainbarrel to gutters on a nearby building. Gardens with no nearby water source may consider making an investment in a water catchment and drip irrigation system.

LAND TENURE

- Legal ownership or a lease is recommended. Gardening on land without permission may put the time, energy, and materials that your group invests into the garden at risk.

SOIL REQUIREMENTS

- Well-draining soil full of organic matter is ideal.
- A soil test is recommended to check for heavy metals, such as lead, as well as the pH and nutrient levels in your soil. Keep Growing Detroit has detailed instructions available for soil testing.

COMMUNITY GARDEN

SUPPLIES & EQUIPMENT

- Shovels
- Rakes
- Garden Forks
- Trowels
- Wheelbarrows
- Buckets
- Hoes
- Vegetable seeds and transplants
- Compost
- Woodchips, straw, or shredded leaves (optional)
- Trellis (optional)
- Row cover (optional)

PLANNING

- Do outreach to get other community members involved in the planning (and eventual planting!) of the garden. Meet with neighbors and other garden members to create a vision for a garden that everyone will enjoy.
- Keep in mind that the more you plant, the more work there is to do. Start small to see what you and your neighbors can handle, and expand your garden gradually.
- Create a planting plan for seeds and transplants. Some seeds can be sown every couple weeks for a continuous harvest, so leave room for those crops.
- If you need assistance with organizing or planning your garden, Keep Growing Detroit's staff can help! Visit us during our office hours at 76 E. Forest Ave, Detroit MI Wednesdays 4-6PM or Fridays 10-12PM.

IMPLEMENTATION

- Prepare garden pathways to create easy access to garden beds and prevent weeds.
- Prepare garden beds. This can include removing sod and loosening compacted soil to allow roots to grow easily, tilling, or building raised beds if in-ground beds are not suitable. Creating "lasagna beds" using layers of grass clippings, cardboard, leaves, and compost the season before is also an option.
- Add compost to the soil to ensure plants receive all the nutrients they need to thrive.
- Sow your seeds and plant your transplants! Make sure transplants are hardened off before planting. Try to plant on an overcast day to prevent roots of transplants from drying out.
- Give all seeds and transplants a good watering after planting. This will help them adjust to their new home.
- Label rows and/or keep a map of where and when each variety was planted.
- Plant perennial flowers, fruits, vegetables, and herbs in public areas and install a colorful sign, which adds curb appeal to the garden.

ON-GOING CARE

- Weekly maintenance: Annual vegetables need 1 inch of water each week on average. Monitor rainfall and provide supplemental watering when necessary. Weed regularly by hand or using a trowel or garden hoe before weeds are large enough to compete for water and nutrients with vegetables or go to seed. Harvest produce at its peak. Many vegetables like lettuce taste better if they are harvested early in the morning.
- Yearly maintenance: Replace, replenish, or repair garden pathways. Put your garden to bed in the fall by removing annual vegetation and covering garden beds with leaves or other organic material. Winterize water catchment and irrigation systems. Prune fruit trees in the winter or early spring. Repair garden infrastructure as needed.

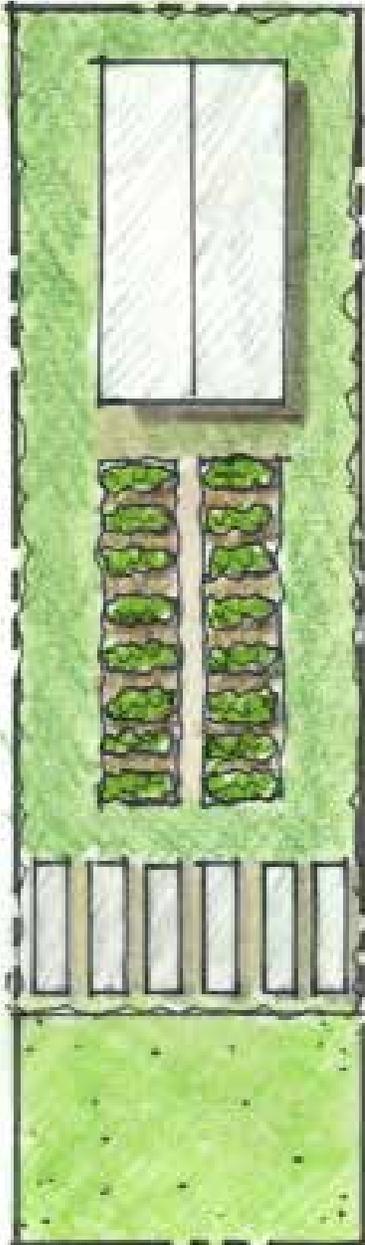
RESOURCES

- Garden Resource Program (GRP): One of your first steps to starting a community garden should be to sign up for the GRP and become part of a growing network of gardeners and advocates working to promote and encourage urban agriculture in the city. Through the GRP, resources such as seeds and transplants are available for gardens located in Detroit, Hamtramck, and Highland Park. An annual membership for a community garden is \$20. Gardens that participate actively in their cluster group become eligible for many additional resources, such as tilling, compost, mulch, tomato stakes, tool sharing and more!

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MARKET GARDEN

Market gardens are small farms that use efficient growing practices to produce high quality fruits and vegetables that can be sold through a variety of outlets ranging from farmers' markets and Community Supported Agriculture (CSA) programs to wholesale outlets like restaurants. Appropriately scaled production-focused market gardens provide income for families while attracting community and economic development opportunities to neighborhoods. Market gardens also contribute greatly to local food security and access efforts.



PROJECT STEPS



LAND TENURE

- Market gardens can require significant investments of time and money. Legal ownership or a lease is recommended to prevent the risk of losing site control. Keep Growing Detroit can assist gardeners seeking to lease or purchase property.

SOIL REQUIREMENTS

- Deep, well-draining soil with lots of organic matter is recommended for vegetable production.
- A soil test is necessary to check for heavy metals, such as lead, as well as the pH and nutrient levels in your soil.

IDEAL LOCATION

- At least one full size lot (30 by 100 feet) to start, although ideally you will have multiple contiguous lots available to keep options for expansion open.

WATER REQUIREMENTS

- Vegetables require frequent watering at most stages of growth, so having a water source on-site is ideal.
- Market gardeners may want to invest in water catchment structures or an irrigation system.

MARKET GARDEN

SUPPLIES & EQUIPMENT

- Basic tools (shovel, rake, trowel)
- Garden Fork and Broadfork
- Wheelbarrow or Garden Cart
- Stirrup or Collinear Hoe
- Seeder(s)
- Tiller
- Irrigation and watering supplies
- Seeds and transplants
- Compost
- Straw or shredded leaves
- Pruners
- Harvest Bins
- Marketing Supplies (rubberbands, produce bags, quart and pint containers)
- Row cover, trellis and staking materials
- Season extension supplies

PLANNING

- Develop a vision and goals for your market garden. This is the first step in creating a sound business plan. Are you simply just looking to sell a little produce to earn some extra cash or are you hoping to generate a significant portion of your income through farming?
- Visit market gardens and farmer's markets around the city to see their operations and share your ideas.
- Identify a good location and share your vision and goals with the surrounding property owners and neighbors. If the community seems supportive, pursue long-term site control.
- Decide what to grow based on what your land can sustain and what you can reliably grow and sell. Some market gardens grow a diverse variety of crops, while others focus on high value specialty crops or items intended for specific wholesale outlets.
- Research and develop plans and practices regarding crop rotation, organic pest management and increasing soil fertility.
- Develop a farm plan including details like a farm map, planting schedule, projected yields, and labor plans. Use this to create your seed and plant order. Consider succession planting for an extended harvest of a crop.
- Develop a farm budget that projects the revenue your market garden will bring in as well as the expenses that will be incurred. Try and assign a timeframe for both in a cash flow budget.
- Like any business, it is important to keep records of any expenses for tax purposes. Also track the inputs to the garden (compost, seeds, labor) and outputs (pounds harvested, sales of crops) to help you evaluate feasibility and better plan for a more productive season next year.

RESOURCES

- A good way for gardeners to gain experience selling produce is through the Grown in Detroit (GID) program, which provides marketing support and opportunities for Garden Resource Program members to sell at Eastern and Wayne State Farmers Markets weekly May-November, as well as wholesale opportunities. For more information, contact the GID Coordinator at (313) 757-2635.
- Recommended reading: The Organic Farmer's Business Handbook by R. Wiswall; Whole Farm Planning by E. Henderson; Four Season Farming by E. Coleman; Building Better Soils for Better Crops by F. Magdoff; Growing for Market, www.growingformarket.com.

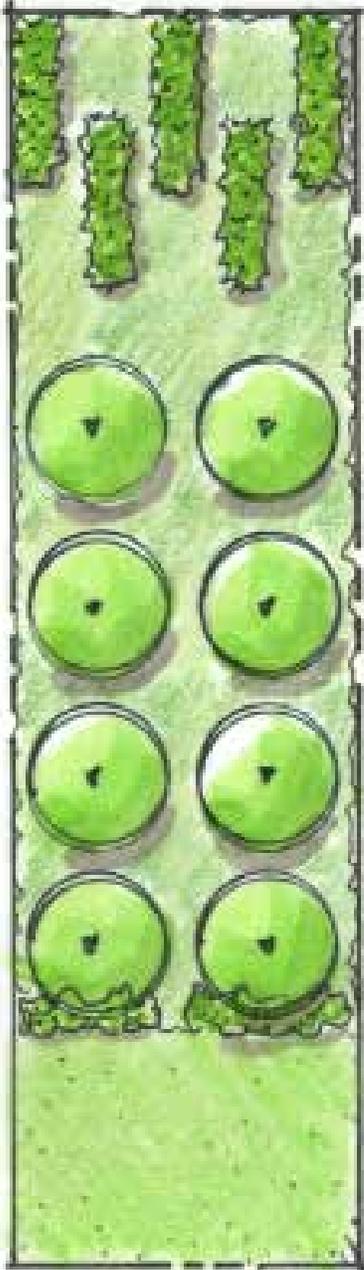
IMPLEMENTATION AND MAINTENANCE

- Prepare planting beds by tilling or aerating the soil and amending with compost.
- Follow your farm plan. Sow seeds with a seeder or directly by hand. Plant transplants. Carefully spacing plants helps to maximize production capacity and minimize labor. Remember to rotate your crop families each year. This will minimize damage from pests and keep your soil in better condition.
- Stake, trellis, and support plants as early as possible to avoid damaging plants later. Apply row cover to transplants at time of planting to prevent pest problems in crops like Brassicas.
- Water regularly, preferably in the morning or late afternoon. Poor watering habits can cause or worsen pest and disease problems. Remove weeds before they begin competing for water and nutrients or go to seed.
- Create and follow good harvest and post-harvest handling standards.
- Collaborate with other market gardeners in your area to share labor, tools, and infrastructure when possible.

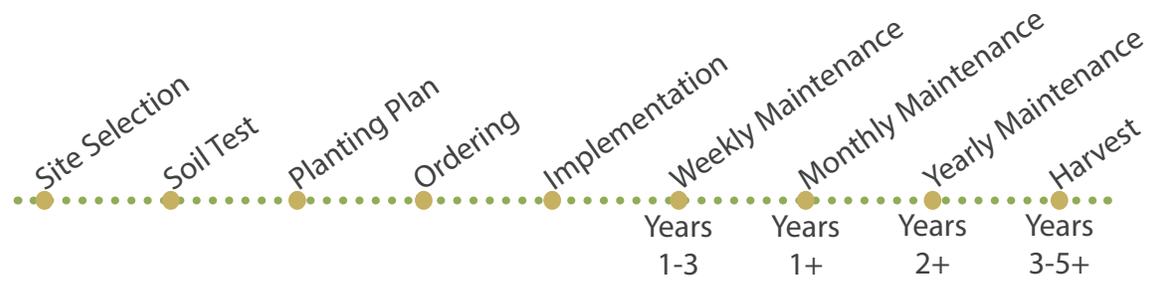
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ORCHARD

Creating a fruit orchard in your neighborhood is a great way to provide food and learning opportunities for your community without the maintenance that community gardens require. The addition of benches, tables, or a gazebo can enhance an orchard and transform it into an educational and community gathering space. Fruit trees of various types can be grown in orchards as well as other small perennial fruit like raspberries, blackberries, or grapes for more variety. Caring for and maintaining an orchard requires an individual or group that will be committed to the project for years, as most fruit trees do not bear fruit for at least three years and can continue to produce fruit for 15 to 20 years.



PROJECT STEPS



LAND TENURE

- Fruit trees are a long-term investment and take between 3 and 5 years to bear their first fruit. Ownership or a lease with the property owner is recommended.

IDEAL LOCATION

- A minimum of one full lot (30 x 100 ft).
- On a gentle slope or an area with good air flow and six to eight hours of full sun per day.
- In a location with wind protection to ensure plant health.

SOIL REQUIREMENTS

- Fertile, well-drained soil.
- Soils high in clay are good for apple and pear trees, however are not well-suited for stone fruits such as plums.

WATER REQUIREMENTS

- A close and convenient water source is recommended. Trees require weekly watering in the first three years and supplemental watering in dry months after three years.

ORCHARD

SUPPLIES & EQUIPMENT

- Fruit trees
- Other perennial fruit
- Woodchips
- Tree guards
- Shovels
- Pitchforks
- Wheelbarrows
- Loppers
- Ladder
- Lawn mower
- Tree watering bags (optional)
- Fencing (optional)
- Bench (optional)
- Compost (optional)

PLANNING

- Before creating a planting plan, get a soil test.
- After taking measurements of the site, decide what fruits to grow and create a planting plan. When creating the planting plan be sure to keep trees 15 feet from roads or sidewalks and 15 feet from all property lines. Check for spacing requirements of other desired bushes or brambles.
- Some fruits grow better in urban environments than others; pears, hybrid plums, tart cherries, and apples tend to grow best in Detroit.
- After fruit varieties are decided, order trees 2-3 months before the scheduled planting.
- Pollination is necessary for fruit development. Apple, pear, and Japanese plum trees all require another variety to pollinate. Be sure to plant at least 5 of each type of fruit tree with at least 2 different varieties. When selecting the different varieties, bloom time should overlap so they are able to cross-pollinate.
- Fruit trees may be grown on different sized rootstock (the root system): standard, semi-dwarf, and dwarf. The rootstock affects hardiness, pest tolerance, and overall size.
- Strong winds may pose a threat to young fruit trees. Dwarf trees require staking, while only some semi-dwarf need staking. Standard size trees rarely need to be staked.
- All fruit trees are subject to pests and diseases. See the Orchard Appendix for information on pest management strategies.
- The addition of perennial fruit can add more variety. Good options include raspberries, blackberries, grapes, gooseberries, and strawberries. Perennial vegetable options include asparagus, sunchoke, and Rhubarb.

IMPLEMENTATION

- Keep tree roots moist prior to planting. Most come bare-root (without any soil around their roots), and should be planted as soon as possible.
- Planting day should preferably be overcast with little or no wind. Make sure the soil has dried out from the winter to prevent compaction. April is a great month for planting trees.
- Plant the fruit trees according to the planting instructions for bare-root trees in the Tree Appendix.
- Apply woodchips on the berm to help retain moisture. See the Tree Appendix for proper mulching instructions.
- Give each tree 5 gallons of water after planting.
- Add tree guards to protect the trees' bark from damage.

ON-GOING CARE

- Weekly maintenance: Each tree should receive 5 gallons of water each week April to October in years 1-3.
- Monthly maintenance: Mowing, litter pick-up, and weeding should occur regularly. Weeds should be removed from the mulch ring to prevent competition for nutrients. Remove any fruit that develops in the first three years so the tree can focus energy on growth. Fallen fruit should be collected for pest and disease prevention.
- Yearly maintenance: Each spring, add another 2-4 inch layer of woodchips around trees. Pruning shapes trees to prepare them for bearing the weight of fruit and should be done in winter or early spring. Different fruit trees require varying pruning methods so conduct some research before beginning. If trees are over-pruned at a young age, it can prolong fruit production and reduce the size of the fruit. See the Orchard Appendix for more details. Trees lacking nutrients may require compost or other amendments.



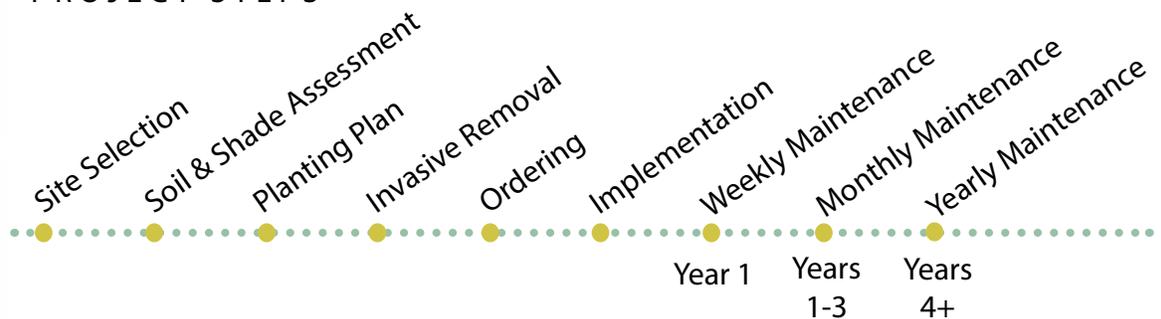
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NATIVE PLANTING

Native plant sites can be a peaceful and beautiful addition to your community while providing many environmental and ecological benefits. By planting species native to Michigan, you can create a natural habitat that attracts and provides food and shelter to wildlife such as birds, butterflies, and bees. A native planting site also provides many opportunities for people to learn about native species, including seed collecting and plant identification. The site will take some effort to get established, but after the initial work it will require little maintenance; a great alternative to mowing grass on vacant lots week after week!



PROJECT STEPS



LAND TENURE

- Legal ownership or a lease with the property owner is recommended since native plants are a long-term treatment.

IDEAL LOCATION

- At least one full lot (30 by 100 feet).
- Plants may be easier to establish in sunny locations.
- Near vegetable gardens and/or beehives to maximize pollination benefits.

SOIL REQUIREMENTS

- Native plants prefer poor soil, so no soil amendments are necessary.
- Both clay and sandy soils are suitable, however plant selection will vary.
- Loose, aerated soil will be easier to plant than heavily compacted soil.

WATER REQUIREMENTS

- A water source should be located on-site or nearby because regular watering is needed while plants are establishing.

NATIVE PLANTING

SUPPLIES & EQUIPMENT

- Weed removal supplies: herbicide or cardboard and woodchips
- Seeds and/or transplants
- Woodchips, if planting transplants
- Straw, if planting seeds
- Shovels, if turning sod
- Trowels if planting transplants
- Wheelbarrows
- Dibbles, which cut through cardboard easily to make holes for transplants, if using cardboard and woodchips method
- Fencing (optional)
- Signage (optional)
- Lawn mower (optional)

PLANNING

- Use soil and sun characteristics at the site to determine what plants can be planted and their ideal locations within the site. Create a map of the site which identifies areas where the sun and soil are different from other areas. Use this to create a planting plan. See the Native Plant Appendix for recommended varieties.
- Order plants 2 to 3 months before the scheduled planting to ensure availability of selected varieties.
- Determine which method of unwanted plant removal to use: sod-turning, herbicide, or cardboard and woodchips. For detailed instructions on each method, see the Native Plant Appendix.
- Transplants can be purchased as plugs or as 1-gallon pots. Plugs are less expensive than 1-gallon pots, however 1-gallon pots establish more quickly. Plugs' growth will catch up to the 1-gallon pots within a couple seasons, but they require more frequent watering.
- Make sure to mark which wildflowers are planted in each section to help with identification while plants are young or not in bloom. Consider planting plugs in clusters of at least seven plants of the same type or intermixing a couple species in each section.

IMPLEMENTATION

- To plant transplants, place each plug about 18 inches apart. Dig a hole with a depth that will allow the base of the transplant to be even with the ground. Be sure to pack firmly with soil to ensure winter freezes and thaws don't push the transplants out of the ground. Follow with a 2 inch layer of woodchips to prevent weeds from growing and to keep the soil moist.
- If planting seeds, loosen the soil and drop the seeds. Cover with a layer of straw to hold the seeds in place.
- Immediately after planting, water seeds or transplants.
- Split rail or branch fencing along the sides or corners can help delineate the planting site. This can be installed before or after planting occurs, but be sure to not step on plants as you work.
- Mow the front 4 to 8 feet of the lot for a more maintained look, if desired.
- Add signage to identify the site and the different species that are planted there.

ON-GOING CARE

- Weekly maintenance: In the first year, plants require watering once a week during the growing season from April to October. If planting in the fall, weekly watering is not necessary until the following spring.
- Monthly maintenance: During the growing season, remove any weeds to ensure plants are not competing for nutrients. This is especially important when natives are 6 to 8 inches in height because the weeds can overtake the native plants. Once natives are over 8 inches, they will outcompete weeds.
- Yearly maintenance: Each spring, mow over all plants (weeds and natives) to remove the previous year's growth. Reapply woodchips as needed.

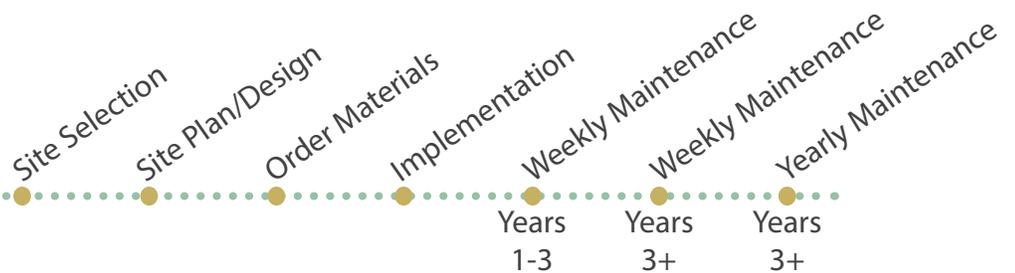


POCKET PARK

By creating a pocket park, residents can transform vacant lots into a beautiful gathering place for the community. Projects can range from a quiet place for reading and reflection to a vibrant, active children's playground. Pocket park designs are versatile and can include features such as benches, pathways, garden beds, play areas, artwork, and even pavilions. Their flexibility can also be a way to use reclaimed materials, such as bricks, logs, or concrete. Creating a pocket park is a great way to showcase your neighborhood's unique qualities and sense of pride.



PROJECT STEPS



LAND TENURE

- Pocket parks often include more permanent features so ownership or a long term lease with the property owner is recommended.

IDEAL LOCATION

- Any full size lot (30 by 100 feet) is suited for a pocket park. Multiple lots can be used to create larger parks.
- Choose a lot with high visibility or pedestrian traffic (such as a corner lot) to promote active use of the park.

SOIL REQUIREMENTS

- Fertile soil is ideal for areas where plants are located.
- Soil requirements and amendments are dependent on the design and plant materials used.

WATER REQUIREMENTS

- If plant materials are added, a convenient source of water is recommended.

POCKET PARK

SUPPLIES & EQUIPMENT

Supplies and equipment will vary based on design, but may include:

- Marking paint
- Measuring tape
- Shovels
- Wheelbarrows
- Trowels
- Pitchforks
- Flowers, trees, shrubs, or other plant material
- Woodchips, bricks, stone, or crushed rock (pathways)
- Lumber (fences, signs, benches, raised beds, pavilions)
- Post hole digger (fences)
- Lawn mower
- Drills or other power tools
- Paint (benches, structures, or

artwork)

- Decorative rocks or boulders
- Tree stumps (seats, games, or decoration)
- Trash receptacles
- Community art pieces
- Topsoil/Compost (raised beds)

PLANNING

- Consider the needs of your neighborhood. Who will be using the park? What will they be using it for? For example, if many children live in the neighborhood, you may want to include a play area.
- Organize a group of neighbors and community members to brainstorm ideas for the park. Work with them to create a plan for the site that everyone is happy with.
- Consider safety in the park. Make sure all areas are visible from the street and there is adequate lighting. Locate children's play areas at least 30 feet away from the street. You may want to include hedges or fencing to serve as a buffer for noise and activity.
- Pocket parks are often a bigger investment of time and resources than other projects. Make sure you have a committed group of residents to help install and maintain the park in the long-term. Save money by using reclaimed or recycled materials whenever possible. For example, bricks or stones can be used as a border for paths or flower beds. Used lumber can be transformed into signs or benches.
- Set and promote installation days to get community members involved. The more community stakeholders involved from the very beginning the better.
- Be sure to order materials, especially trees and hard-to-find plants, in advance to ensure availability.
- See the Hardscape Appendix for details on park elements. See all other appendices for recommendations on plant materials.

ON-GOING CARE

- Weekly Maintenance: In the first three years, any plant material in the park will need to be watered weekly. The amount will vary depending on what was planted in the park. Remove litter from the park and trash from receptacles as needed.
- Monthly Maintenance: After the third year, some plant materials may need to be watered at least once a month. Mow grassy areas every couple weeks during the growing season (April to October).
- Yearly Maintenance: Add mulch or other material to pathways. Remove any art seasonally or weatherize it to keep it outside all year. Routine maintenance may be needed and may include fixing, replacing, or weather-proofing park features.

IMPLEMENTATION

- Use marking paint and measuring tape to lay out features according to the site plan.
- Install any structures, brickwork or pathways first.
- Plant any trees or large shrubs followed by smaller flowers and shrubs. See the Native Plant Site, Orchard, and Tree Appendices for details on planting and other information.
- Water any plant materials immediately after planting.
- Consider securing benches, artwork, signs, and other items that can be easily removed from the site.



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CUT FLOWER APPENDIX

ARRANGING BOUQUETS

The top elements to keep in mind when creating bouquets are:

Proportion & Balance

- The height and width should be appropriate for the container.
- Use an odd number of flowers for those that stand out more than others.
- After arranging, hold the bouquet out in front of you to ensure it has a rounded, well-balanced shape.

Texture & Form

- Create contrast with various petals, leaves, and shapes.

Color

- Include neutrals such as soft green, light yellow, or grasses.
- Try pairing complementary colors together: Blue with orange, purple with yellow, and red with green.



Sweet peas as a single variety bouquet



Sunflowers & statice, a complementary color bouquet



Lupine in a bud vase



This document is part of a series of vacant lot treatment

EXTENDING VASE LIFE

Use these tips to preserve the life of your cut flowers:

- Keep flowers in water for a few hours before arranging. A preservation solution (1 quart water, 2 tbsp fresh lemon juice, 1 tbsp sugar, & $\frac{1}{2}$ tsp bleach) can also be used to help extend the vase life.
- After arranging, cut the stem of the bouquet on an angle and place in water. Rubber bands are useful to keep bouquets together.
- Flowers should be stored in a cool location and out of the sun. Keep them away from fruits and vegetables such as apples, avocados, bananas, cataloupe, kiwi, mangoes, peaches, pears, plums, and tomatoes. These fruits and vegetables produce ethylene (a gas that makes flowers ripen more quickly).
- When flowers are arranged in their vase, change the water every couple of days. Some flowers emit sap that can be toxic to other flowers. If flowers look droopy, recut the stem.
- Bring samples of cut flowers home to test how long they last in a vase and to learn what steps to take to extend their life.

HARVEST TIPS

- Cut all flowers before pollen emerges. Flowers will not last as long if cut after pollen is present. In the first year, take note of when different flower varieties begin to produce pollen to improve harvest.
- For spiky flowers, cut when only some of the flowers on the spike are blooming. The rest will open while in the vase, which will keep the bouquet visually interesting and healthy for longer.
- For sunflower-type flowers, harvest when blooms have just fully opened.

RESOURCES

BOOKS:

Best Garden Plants for Michigan
by Tim Wood & Alison Beck

Cutting Gardens
by Barbara Pleasant

The Flower Farmer
by Lynn Byczynski

Flower Confidential
by Amy Stewart

Specialty Cut Flowers
by Allan M. Armitage & Judy M. Laushman

ONLINE:

Association of Specialty Cut Flower Growers
www.ascfg.org

Dripworks
(800) 522-3747
www.dripworks.com

Green Sinner
www.greensinner.com

High Mowing Organic Seeds
(802) 472-3201
www.highmowingseeds.com

The Homeless Garden Project:
Santa Cruz, CA
www.homelessgardenproject.org

Johnny's Selected Seeds
(800) 854-2580
www.johnnyseeds.com

My Luscious Backyard
www.mylusciousbackyard.ca

Rodale Institute: New Farm
[newfarm.rodaleinstitute.org/
columns/cut_flowers/2003/
jan_2003/index.shtml](http://newfarm.rodaleinstitute.org/columns/cut_flowers/2003/jan_2003/index.shtml)



CUT FLOWER APPENDIX

FLOWER VARIETIES & PLANTING GUIDE

Common Name	Botanical Name	Spacing ("=inches)	Preferred Seeding	Days to Harvest	Bouquet Type
Annuals: live for only one growing season					
Ageratum	<i>Ageratum houstonianum</i>	9-12"	Transplant	80-110	Filler
Basil	<i>Ocimum basilicum</i>	2-8"	Either	60-80	Filler
Celosia*	<i>Celosia argentea plumosa</i>	6-12"	Either	Varies	Filler, Drying
Cosmos	<i>Cosmos bipinnatus</i>	9-12"	Direct	75-120	Showy
Drumstick Flower	<i>Craspedia globosa</i>	12"	Transplant	140-160	Drying
Dill Flower	<i>Anethum graveolens</i>	2-4"	Either	40-105	Filler
Globe Amaranth	<i>Gomphrena globosa</i>	6-8"	Transplant	85-100	Filler, Drying
Gruppenblau	<i>Salvia farinacea</i>	12-18"	Transplant	Varies	Spiky
Marigold	<i>Tagetes patula</i>	8-18"	Either	50-90	Showy
Ornamental Kale	<i>Brassica oleracea</i>	6"	Either	90-110	Showy
Red Broom Corn*	<i>Sorghum bicolor</i>	12"	Direct	85-110	Filler, Drying
Snapdragon	<i>Antirrhinum majus</i>	9-12"	Transplant	100-120	Spiky
Statice	<i>Limonium sinuatum</i>	12"	Transplant	110-120	Filler, Drying
Strawflower	<i>Bracteantha bracteata</i>	10-12"	Either	75-85	Drying
Sunflower	<i>Helianthus annuus</i>	9-24"	Direct	Varies	Showy, Single Variety
Sweet Peas	<i>Lathyrus odoratus</i>	6-12"	Direct	74-98	Bud Vase, Single Variety
Zinnia	<i>Zinnia elegans</i>	9-12"	Either	75-90	Showy
Perennials: live for more than two growing seasons					
Black Eyed Susan	<i>Rudbeckia hirta</i>	12-18"	Either	100-120	Showy
Buddleia	<i>Buddleia davidii</i>	3-6"	Transplant	85-90	Spiky
Larkspur	<i>Consolida ambigua</i>	4-6"	Direct	100-120	Bud Vase, Spiky
Pincushion Flower	<i>Scabiosa atropurpurea</i>	9-15"	Either	75-110	Showy
Yarrow	<i>Achillea millefolium</i>	9-12"	Transplant	90-110	Filler, Spiky
Biennials: live for only two growing seasons, flowering in the second year					
Foxglove	<i>Digitalis purpurea</i>	12"	Transplant	135-150	Bud Vase
Lupine	<i>Lupinus perennis</i>	18-24"	Either	365	Bud Vase, Spiky

*This is an aggressive self-seeding plant, so keep a close eye on them so they do not spread uncontrollably.



Ageratum



Celosia



Craspedia



Globe Amaranth



Gruppenblau



Orn. Kale



Scabiosa



Yarrow



Digitalis



Zinnia



Statice



Strawflower



Snapdragon

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TREE APPENDIX

DEFINITIONS

- **Ball & Burlapped:** Trees stored with soil around their roots which is held in place by burlap, twine, and a metal cage. Trees wrapped in burlap can be stored the longest before transplanting as the burlap breathes easily and keeps roots moist. These trees not appropriate for tree nurseries.
- **Bare-root:** Trees that are dug and stored without soil around their roots. They are easy to plant because they weigh much less than ball and burlapped trees, but cannot be stored as long because roots dry out quickly. These trees are appropriate for orchards, tree nurseries, and tree stands.
- **Container:** Trees stored in a plastic container with soil around their roots. These trees are appropriate for pocket parks, tree nurseries, and tree stands but are prone to circling roots.
- **Whip:** A very young tree that is about 1/4 inch in diameter.



Ball & burlapped trees



A bare-root tree



Container trees



A properly-formed mulch ring

PLANTING INSTRUCTIONS

The Basics

- Determine the depth of hole by locating the tree's root collar (where the trunk begins to flare out into the roots). This should be even with the ground when planted.
- Dig a hole that is as deep as and twice as wide as the tree's roots.
- Remove the sod first, keeping it in a separate pile from the fill dirt.
- Fill in the hole with fill dirt, compacting as you go to prevent air pockets.
- When the hole is filled, place the sod grass-side down in a circle around the hole to create a berm.

Ball & Burlapped

- Gently roll the tree into the hole. It may take 2 or 3 people to get the tree in the ground with minimal damage because ball and burlapped trees are often very heavy. Make sure the trunk of the tree is straight. If the trunk has a curve to it, use the bottom 12 inches as a guide to get the tree placed in the correct position. Once in place, stabilize the tree by packing soil into the base of the hole.
- Fold down the metal frame on the root ball. Cut the twine holding the burlap in place, and fold down the burlap into the bottom of the hole.

Bare-root

- Prune any damaged or excessively long roots prior to planting.

Container

- Gently pull the tree, roots, and soil out of the container. Using a knife, make four cuts down the sides of the container to break any circling roots, and loosen roots on the bottom. Place the tree in the hole and stabilize so the trunk is straight.

MULCHING

- Mulch is beneficial for a number of reasons; not only does it break down and provide nutrients to plants, but it helps retain moisture in the soil.
- When planting trees, the final step is creating the berm. After the sod has been layed grass-side down around the hole, cover all exposed dirt and sod with a 2-3 inch layer of woodchips. This will keep water near the roots.
- Brush away any woodchips that are within 6 inches of the tree's trunk. It is important to keep this area free of woodchips to prevent the trunk from rotting at its base. The mulched area should look resemble a donut.

TREE APPENDIX

TREE NURSERY HARVEST & POST-HARVEST CARE

- Root-pruning is done by using a shovel to sever the roots around the base of the tree to reduce the size of the root system. It should be done 6 to 12 months before transplanting, either in spring or fall.
- After trees are removed from the ground, they should be planted immediately. Hydrogel, which is a water-absorbing compound, may be used to keep the roots moist if trees cannot be planted immediately. Trees may also be stored with roots in water 12 to 24 hours before planting instead of using hydrogel.

YOUNG TREE PRUNING

- Pruning offers many benefits to plants and the overall landscape. Reasons for pruning include training the tree to grow in the proper shape, maintaining and improving the health of the trunk, branches, and foliage.
- In nursery trees, pruning should not occur until trees are in their second year and should be done in late winter or early spring. At that point, only corrective pruning should be done. This means removing dead, broken, or diseased branches.
- Scaffold branches, which grow off the main trunk, should form an angle between 60 and 70 degrees. Branches should be spaced at least 8 inches apart on the trunk, but 20 to 24 inches is ideal.
- There should be 5 to 7 scaffold branches around the trunk of the tree that do not overlap. Overlapping branches prevent lower limbs from getting adequate light.
- Often, more than one central leader forms on young trees. Only one is needed, so the weaker leader(s) should be removed.

RESOURCES ONLINE:

NCSU Best Management Practices
www.bae.ncsu.edu/programs/extension/ag-env/nursery/index.html

St. Louis Urban Tree Farms
www.eslarp.uiuc.edu/la/LA341-F96/treefarm/treefarm.html



RECOMMENDED TREE SPECIES

Common Name	Latin Name	Spread	Height	Attributes
Autumn Brilliance Serviceberry	<i>Amelanchier grandiflora</i>	18 to 24 feet	20 to 25 feet	Ornamental
Eastern Redbud	<i>Cercis canadensis</i>	10 to 20 feet	15 to 25 feet	Ornamental
Japanese Tree Lilac	<i>Syringa reticulata</i>	Up to 15 feet	Up to 20 feet	Ornamental
Paperbark Maple	<i>Acer griseum</i>	8 to 15 feet	20 to 25 feet	Ornamental
Red Flowering Dogwood	<i>Cornus florida</i> "Cherokee Brave"	Up to 15 feet	Up to 18 feet	Ornamental
Thornless Hawthorn	<i>Crataegus</i> "Crusader"	15 to 20 feet	20 to 25 feet	Ornamental
Bloodgood London Plane	<i>Platanus acerifolia</i> "Bloodgood"	40 to 50 feet	60 to 70 feet	Shade
Frontier Elm	<i>Ulmus</i> "Frontier"	Up to 30 feet	Up to 40 feet	Shade
Hackberry	<i>Celtis occidentalis</i>	Up to 40 feet	Up to 60 feet	Shade
Legacy Sugar Maple	<i>Acer saccharum</i>	15 to 20 feet	30 to 40 feet	Shade
Littleleaf Linden	<i>Tilia cordata</i> "Greenspire"	15 to 30 feet	40 to 50 feet	Shade
Northern Red Oak	<i>Quercus rubra</i>	45 feet	60 to 80 feet	Shade
Swamp White Oak	<i>Quercus bicolor</i>	45 to 60 feet	45 to 60 feet	Shade
Tulip Tree	<i>Liriodendron tulipifera</i>	20 to 40 feet	40 to 60 feet	Shade

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ORCHARD APPENDIX



PRUNING*

Pruning is the shaping process of trees in order to prepare them to bear the weight of fruit, to promote air circulation, and to prevent disease. It is best done in the early stages of tree growth where branches are most flexible during the dormant months of February, March, or April. When pruning, first work to shape the frame of the tree, then create a scaffold with the branches (think of an evergreen tree with layers of branches that attach to the trunk at 90 degree angles). Lastly, consider the fruit and the light and air needed to grow.

Two prominent methods of pruning are:

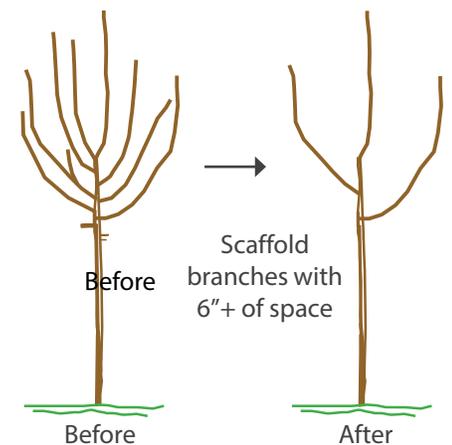
- **Modified Leader:** Appropriate for apples, pears, cherries, and European plums. These trees have a tall central trunk with several staggered scaffold branches. Where branches meet the trunk, they should form wide angles and be at least 6 inches away from each other.
- **Open Center:** Appropriate for peaches and Japanese plums. This method removes the central leader and leaves a few closely-clustered scaffold branches.

There are two types of pruning cuts:

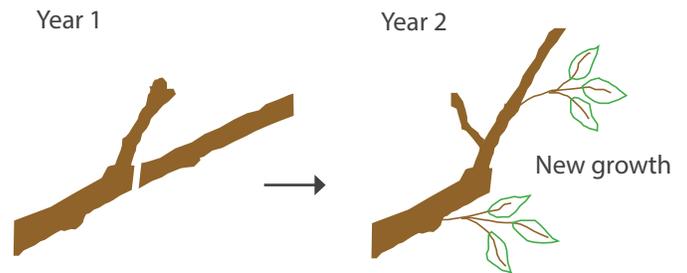
- **Thinning Cut:** Removes crowded branches by cutting where they meet. Use this when thinning the tree, shaping the frame, and removing unnecessary branches. Cut as flat and as close to the parent branch as possible to promote fast healing.
- **Heading Cut:** Cut across the branch away from the branch union. Use the heading cut in areas where you want to promote growth.

* This is a basic introduction to the concepts of fruit tree pruning and tree care. Keep Growing Detroit staff can provide more detailed resources.

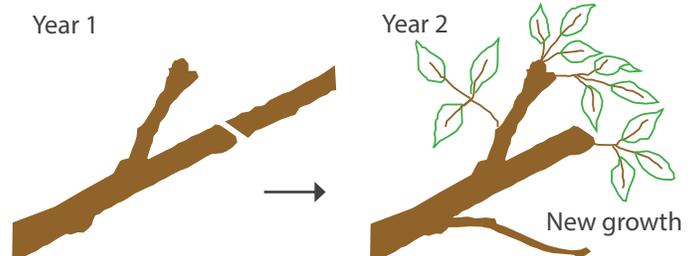
MODIFIED LEADER



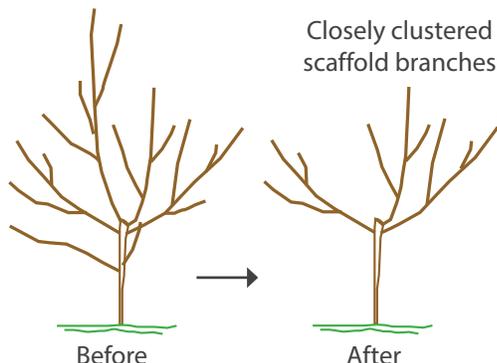
THINNING CUT



HEADING CUT



OPEN CENTER



ORCHARD APPENDIX

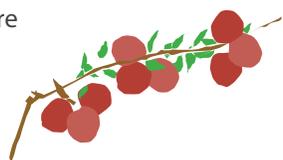
INTEGRATED PEST MANAGEMENT (IPM)

- Fruit trees that are well cared for and planted in an ideal location are less sensitive to pests and diseases, however using IPM strategies will produce a higher quality fruit. IPM involves using a common sense approach to dealing with pests and focuses on prevention, monitoring and identifying, and control.
- Apples sold at market are put in two categories: firsts and seconds. Firsts are mostly unblemished and intended for fresh eating, while seconds are less attractive and meant for cooking or cider. Firsts sell at a higher price but will most likely require consistent spraying of organic pesticides which is costly and time-consuming. Other tree fruits are less susceptible to pests than apples and therefore may be better to grow for market.

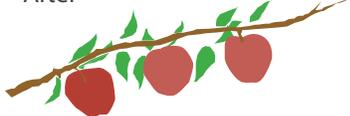
THINNING

- For a healthy and delicious harvest consider thinning the fruits on your tree. It can be time consuming but will improve the overall quality of fruit.
- In the early summer when tree buds have begun to mature into young fruits, go through and pick off all the unhealthy fruits. You should leave 2 to 3 fruits in each grouping. This will allow your tree to send more energy to developing only the most desirable fruits.

Before



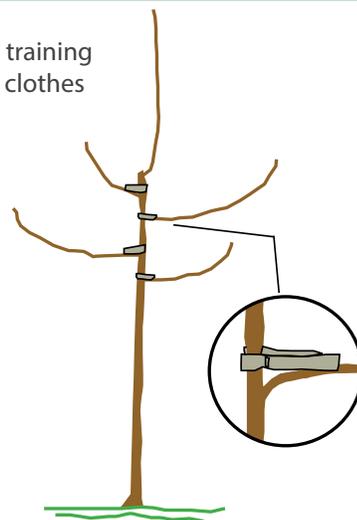
After



TRAINING

- Training trees allows them to grow in the right direction and creates a well-shaped tree. Having a tree with a wide base and a narrow top creates a strong frame which promotes light and air flow.
- Encourage lateral branches that grow parallel to the ground and form 90 degree branch angles. An easy way to do this is to use clothes pins to support the lateral branches.

Fruit training with clothes pins



FRUIT TREE LIFECYCLES & SPACING

Fruit Variety	First Bearing	Full Bearing	Expected Life	Standard Stock	Semi-Dwarf	Dwarf
← time from planting until fruit production →			← spacing requirements →			
Apricot*	3-4 years	8 years	15 years	20 feet	N/A	N/A
Apple	3-4 years	5-10 years	40+ years	35 feet	12-15 feet	10 feet
Peach* & Plum	2-4 years	5 years	12 years	20 feet	15 feet	10 feet
Pear	3-5 years	10 years	30 years	20 feet	N/A	12 feet
Sweet Cherry*	4 years (2 for dwarf)	8-9 years	30+ years	20-25 feet	15 feet	10 feet
Tart Cherry	3-4 years	7-8 years	20+ years	20 feet	15 feet	10 feet

*These varieties can be grown in Michigan, however can be challenging to grow due to various problems with pests and disease.

RESOURCES

BOOKS:

The Apple Grower
by Michael Phillips

The Backyard Orchardist
by Stella Otto

ONLINE:

Chicago Rarities Orchard Project
www.chicagorarities.org

Fedco Co-op Garden Supplies
www.fedcoseeds.com

Heartsong Farm
www.herbsandapples.com

The Fruit Tree Planting Foundation
www.ftpf.org

Midwest Organic Tree Fruit Growers Network
www.mosesorganic.org/treefruit/information.htm

Philadelphia Orchard Project
www.phillyorchards.org

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NATIVE PLANT APPENDIX

DEFINITIONS

Native plants have evolved or developed over many years in a particular region or ecosystem. Plants that are native to Michigan are those that existed here before European settlers came to the area in the 1600s.

Non-native plants were introduced with human help (intentionally or accidentally) to a place or habitat where it was not previously found. Note: Not all non-native plants are invasive.

Invasive plants are both non-native and able to establish on many sites, grow quickly, and spread to the point of disrupting plant communities or ecosystems, causing environmental or economic harm.

Weeds are plants (native or non-native) that are unwanted in the place they are growing.

Light is the light needed for the plant to thrive. "Sun" means direct light for almost the entire day. Part sun means direct light for more than half of the day. Light shade means shade for more than half of the day. Shade means shade for almost the entire day.

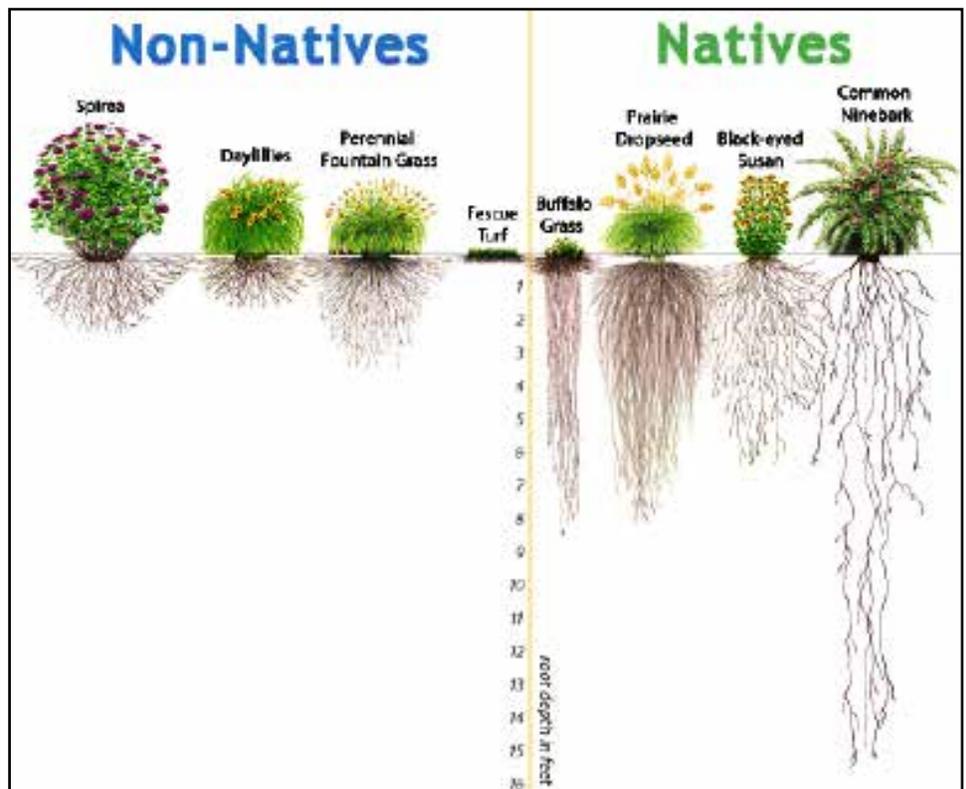
Soil moisture is the ideal wetness of the soil. Plants that prefer Dry areas likely receive a lot of sun and are located in soil that does not hold moisture well, such as sand. Plants that prefer Wet areas are likely to be found in wetlands.

Bloom time is the peak season for the flowers to bloom.



WHY NATIVE PLANTS?

- Native plant communities preserve the balance and biodiversity of our fragile ecosystems. These plants serve as essential host, habitat, and food sources for many unique wildlife species.
- The deep, fibrous root systems of native plants protect our valuable topsoils and provide natural erosion control. Used as an important stormwater management tool, native plantings capture stormwater runoff, mitigate flooding, and protect our streams, rivers, and lakes from harmful contaminants.
- If planted properly, native plants are typically more hardy, drought tolerant, and require less care than non-native perennials or annuals once they are established. Native plants are also more likely to withstand extreme weather conditions.



As you can see above, the root depth of native plants is much deeper, which is why they are able to provide better erosion control than non-native species.

NATIVE PLANT APPENDIX

WEED CLEARING METHODS

- In order to prepare for your native planting site, preparation is required to kill off unwanted non-natives. Removing these unwanted plants is important because it lowers the number of competitors for water and nutrients while plants are establishing.
- Three methods can be used, which are described below. Controlled burns can be effective but are not appropriate for residential areas.

CARDBOARD & WOODCHIPS

This method uses a layer of cardboard and woodchips to kill any weeds. Mow over any existing plants at least one season before planting. Remove all tape from cardboard and place a layer over the area, making sure to overlap the edges so there are no cracks. Cover with a 2 to 3 inch layer of woodchips. If you have extra materials, you can do multiple layers of cardboard and woodchips. This will block the sunlight from reaching any living plants, effectively killing them off and preparing the land for new plants. Depending on how long you wait to plant after laying down the cardboard and woodchips, a dibble may be needed to plant plugs in the ground.

- Pros: Cardboard can often be found for free, which helps cut back on costs. Cardboard and woodchips decompose over time and are an extra source of nutrients. Because they take a couple years to decompose, it provides protection from new weed growth while natives are getting established.
- Cons: Only transplants should be planted where this method is used. If there are cracks in the cardboard, weeds may need to be hand-pulled. Because cardboard breaks down after a couple years, weeds may return.

HERBICIDE

This method involves a series of chemical sprays on the planting area. Depending on the types of weeds present, different strengths and types of herbicide are required. Any existing plants should be tilled or mowed prior to applying herbicide.

- Pros: Both seeds and transplants can be planted after this treatment, and it gets the job done quickly.
- Cons: It's a chemical and causes damage to microorganisms in the soil. Spraying occurs multiple times and may need to be done by a professional depending on the strength. It also must be done on calm, dry days to be most effective.

SOD-TURNING

This method is done by using a shovel to cut sod into pieces which are then turned grass-side down on the ground. This leaves the roots of the grass and other plants severed and exposed.

- Pros: This method does not require any additional costs and is very effective in killing weeds. Both transplants and seeds can be planted if this method is used.
- Cons: If planting a large area, this can be tiresome and labor-intensive work. If you have a lot of people to do the work but few other resources available, this is a good option.

RESOURCES

BOOKS:

The Meadow Project
by Catherine Zimmerman

Perennials for Michigan
by Nancy Szerlag & Alison Beck

ONLINE:

Brooklyn Urban Meadow
www.urbanmeadowbrooklyn.blogspot.com

Christensen's Plant Center
(888) 454-8733
www.christensensplantcenter.com

Going Native
www.ncsu.edu/goingnative

JFNew
(574) 586-2412
www.cardnojfnew.com/nursery

Lady Bird Johnson Wildflower Center
www.wildflower.org

Michigan Native Plant Producers Association
www.mnppa.org

Native Plant Nursery
(734) 677-3260
www.nativeplant.com

Native Plants & Wildlife Gardens
www.nativeplantwildlifegarden.com

Native Seed Farm
www.greenbeanchicago.com/native-seed-farm-transforms-vacant-lot-urban-prairie-garden/

Wildflower Association of Michigan
www.wildflowersmich.org

Wildtype
(517) 244-1140
www.wildtypeplants.com

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NATIVE PLANT APPENDIX

RECOMMENDED NATIVE PLANTS

Common Name	Latin Name	Light	Soil Moisture	Bloom Time
Butterfly Weed	<i>Asclepias tuberosa</i>	Full Sun	Dry-Medium Dry	Summer
Grey Goldenrod	<i>Solidago nemoralis</i>	Full Sun	Medium Dry	Fall
Indian Grass	<i>Sorghastrum nutans</i>	Full Sun	Medium to Med. Dry	N/A
Little Bluestem Grass	<i>Schizachyrium scoparius</i>	Full Sun	Medium Dry to Dry	N/A
Mountain Mint	<i>Pycnanthemum virginianum</i>	Full Sun	Medium to Med. Wet	Summer
New England Aster	<i>Aster novae-angliae</i>	Full Sun	Medium to Med. Wet	Fall
Rough Blazing Star	<i>Liatris aspera</i>	Full Sun	Medium to Dry	Late Summer
Showy Goldenrod	<i>Solidago speciosa</i>	Full Sun	Medium to Med. Dry	Fall
Smooth Aster	<i>Aster laevis</i>	Full Sun	Medium to Med. Dry	Fall
Swamp Milkweed	<i>Asclepias incarnata</i>	Full Sun	Wet to Medium	Summer
Yellow Coneflower	<i>Ratibida pinnata</i>	Full Sun	Medium to Med. Dry	Late Summer
Wild Lupine	<i>Lupinus perennis</i>	Full Sun to Pt. Sun	Medium Dry to Dry	Spring
Wild Strawberry	<i>Fragaria virginiana</i>	Full Sun to Pt. Sun	Medium to Med. Dry	Spring
Hairy Beardtongue	<i>Penstemon hirsutus</i>	Full Sun to Lt. Shade	Medium Dry	Spring
Purple Coneflower	<i>Echinacea purpurea</i>	Full Sun to Lt. Shade	Medium Dry	Mid to Late Sum.
Sand Coreopsis	<i>Coreopsis lanceolata</i>	Full Sun to Lt. Shade	Medium to Med. Dry	Early Summer
Yarrow	<i>Achillea millefolium</i>	Full Sun to Lt. Shade	Dry Medium	Early Summer
Great Blue Lobelia	<i>Lobelia siphilitica</i>	Full Sun to Full Shade	Medium to Med. Wet	Late Sum. to Fall
Black Eyed Susan	<i>Rudbeckia hirta</i>	Part Sun to Full Sun	Medium Wet to Med. Dry	Summer
Wild Bergamot/Beebalm	<i>Monarda fistulosa</i>	Part Sun to Full Sun	Medium	Summer
Common Cinquefoil	<i>Potentilla simplex</i>	Light Shade to Full Sun	Medium to Med. Dry	Spring
Wild Columbine	<i>Aquilegia canadensis</i>	Light Shade to Full Sun	Medium to Dry Med.	Spring
Cardinal Flower	<i>Lobelia cardinalis</i>	Light Shade to Pt. Sun	Medium Wet	Late Summer
Short's Aster	<i>Aster shortii</i>	Full Shade to Pt. Sun	Medium	Fall
Wild Geranium	<i>Geranium maculatum</i>	Full Shade to Pt. Sun	Medium to Dry Med.	Spring
Wild Ginger	<i>Asarum canadense</i>	Full Shade	Medium	Spring



Grey Goldenrod



Indian Grass



Little Bluestem



Mountain Mint



Yellow Coneflower



Wild Lupine



Wild Strawberry



Purple Coneflower



Great Blue Lobelia



Black Eyed Susan



Wild Bergamot



Common Cinquefoil



Wild Columbine



Short's Aster

HARDSCAPE APPENDIX



SIMPLE ELEMENTS

- **Pathways:** These are useful in directing foot traffic. Pathways are very flexible and can be made out of a variety of materials, including mulch or crushed rock however costs vary significantly. When planning pathways, consider the natural flow of the site and take into consideration any existing paths. Try framing the pathway entrance with an arbor for extra curb-appeal.
- **Trash bins:** To keep your park clean, provide a place for users to throw trash away. Trash bins can be purchased or built. Keep in mind, though, that trash bins will require maintenance with the removal of trash and restocking of empty trashbags. Using recycled 55 gallon drums is an alternative to providing trash bags if you have a place to dump the waste. Only install trash bins if you or a neighbor has the time to take care of them. Try placing them inside a wooden structure covered in artwork to make them look nicer!
- **Artwork:** A fun way to decorate the space and get kids and community artists involved. Be creative and come up with an idea that represents your neighborhood!

COMPLEX ELEMENTS

- **Fencing:** This helps to delineate the space and can also help to guide foot traffic through specific entryways. Fencing is also a great option for preventing cars from driving through the space and causing damage to vacant properties. There are many styles of fencing, which can help shape the feel of the space. These include split-rail, branch, and log fencing.
- **Benches & Tables:** Place benches or tables strategically in the park considering where people should gather and the direction that should be faced. Place a bench by a children's play area so parents can keep an eye on their kids, or a table under the shade of a tree and with a view of a flower garden to create a relaxing space. Keep in mind, however, that creating too comfortable of a sitting area may provide a place for people to sleep.
- **Gathering areas:** Anything from picnic tables to a gazebo can provide a great community gathering area. Placing benches or a pavilion in these areas can bring neighbors together by giving them a space to hold community events while giving the site a focal point. Keep in mind that structures larger than 100 square feet require a permit.
- **Play areas:** These can be created using many different recycled materials, including stumps from old trees. Be creative! You can also use plants of varying heights to create a maze or labyrinth for children to play in, however promote a safe place by not planting anything that is extremely tall. Other features include sandboxes or tree swings.

RESOURCES

ONLINE:

Free Playground Structure Plans
www.craftsmanspace.com

Home How-To Guide
www.popularmechanics.com/home/how-to-plans

Paley Park
www.pps.org/great_public_spaces/one?public_place_id=69&type_id=0

University of Washington
depts.washington.edu/open2100/pdf/2_OpenSpaceTypes/Open_Space_Types/pocket_parks.pdf

