



Landscape Installation on Every Budget Workbook



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- Establish the Budget
- Get Design Plans Together
- Make a Plant List and Source at Nurseries
- Call 8.1.1

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- Place Bulk Orders
- Start with Grading and End with Irrigation

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- Sod Cut to Remove Grass
- Sheet Composting

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- Apply Sufficient Water
- Select Smallest Plants Possible

Make it Fun 18

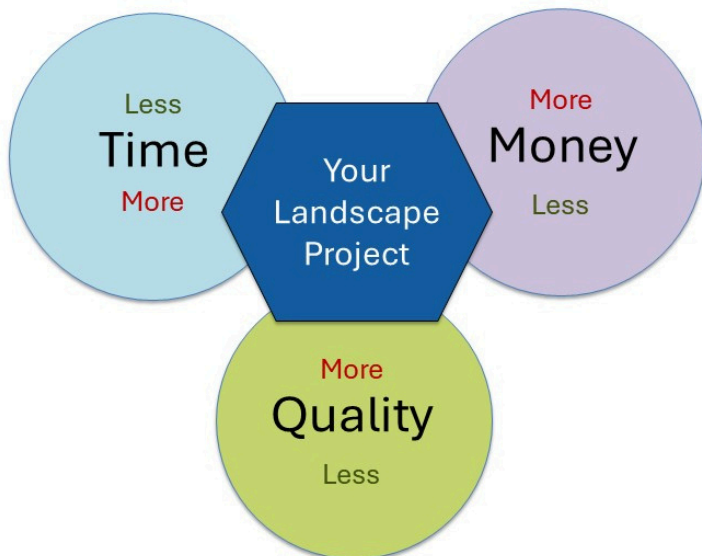
- Create Habitat and Invite Wildlife
- Embrace Color and Art

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- Protect Trees
- Integrated Pest Management
- Hydrozone and Weather-based Irrigation
- Focus on Building the Soil Sponge

Planning Before Action

Establish Your Budget and Get Ready to Build



Remember you only ever get to choose two of these three:

Less Time: More Quality = More Money

Less Time: Less Money = Less Quality

Less Money: More Quality = More Time

Be prepared for the project to take twice as long or cost twice as much than you originally planned because that is the nature of design and installation.

Hire a Professional or Do-it-Yourself?



Doing it Yourself allows you to learn from your experience, potentially saving money.

If you are handy and ambitious, labor-intensive tasks may be best suited for DIY. Turf removal, planting, and installing drip irrigation are good examples .




Hiring a Professional allows you to take advantage of their experience and expertise, potentially saving time and improving quality.

Permitted work, work requiring specialized skills, and bulk purchases requiring deliveries are best handled by professionals.

What You Can See Will be Half the Budget

Invest in Design/Build



10-20% of Budget

- Measure twice, dig once and hire a pro to help with the big questions.


Invest in Planting



15-20% of Budget

- The biggest visual impact requires a small investment; plant lots of plants.

Invest in Permeability



20% of Budget

- Hardscape is the biggest variable that can increase the overall budget.

Much of Your Investment Will be Unseen Infrastructure

Invest in Soil



10% of Budget

- Single greatest investment in long-term health of the landscape.

Invest in Rain



20% of Budget

- Labor and materials for downspouts, gutters & drainage to capture rain in soil.

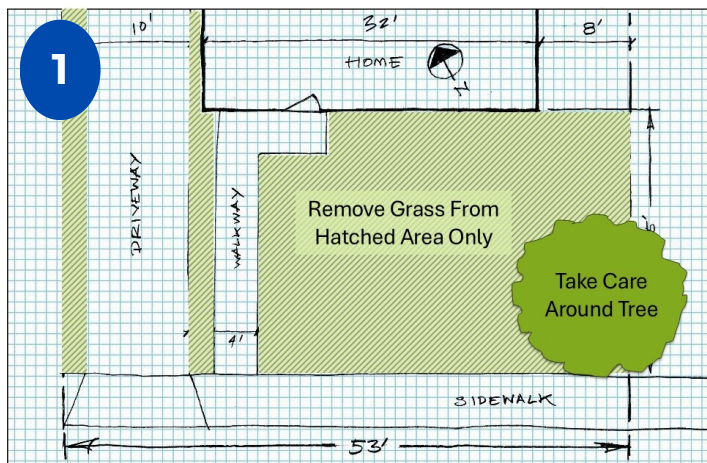
Invest in Valve Zones



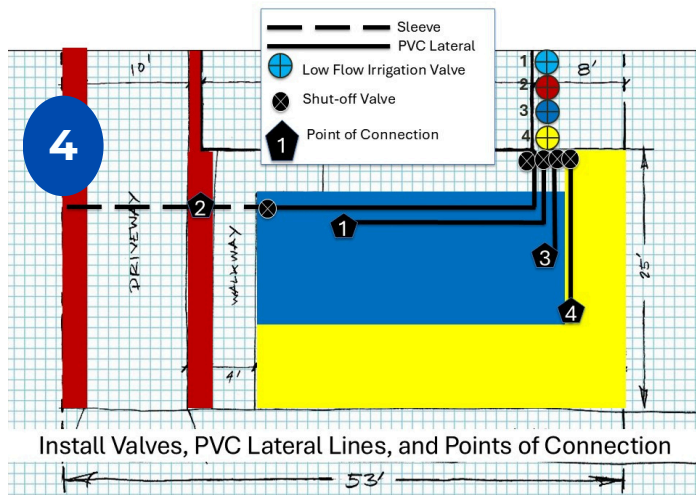
15% of Budget

- More irrigation infrastructure gives more targeted control over water usage.

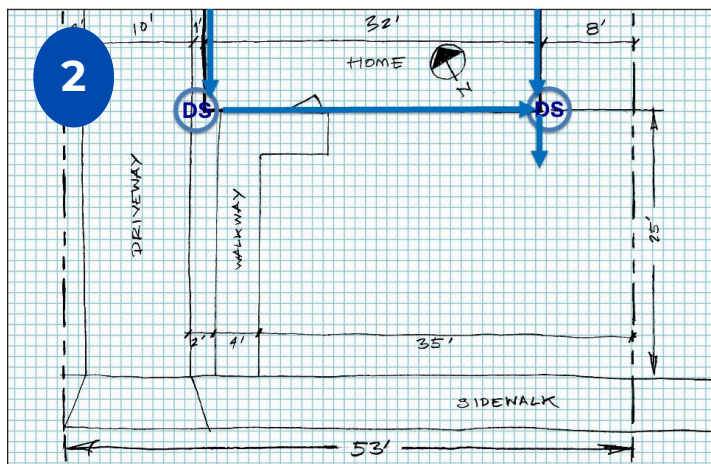
Get Your Design Plans Together



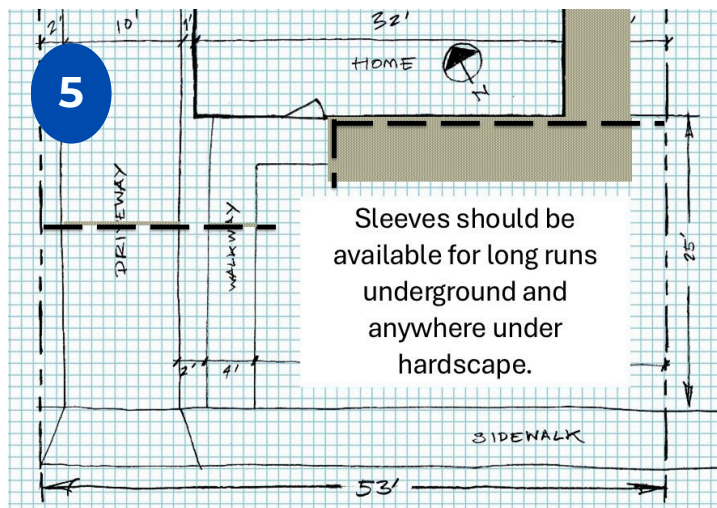
Demolition



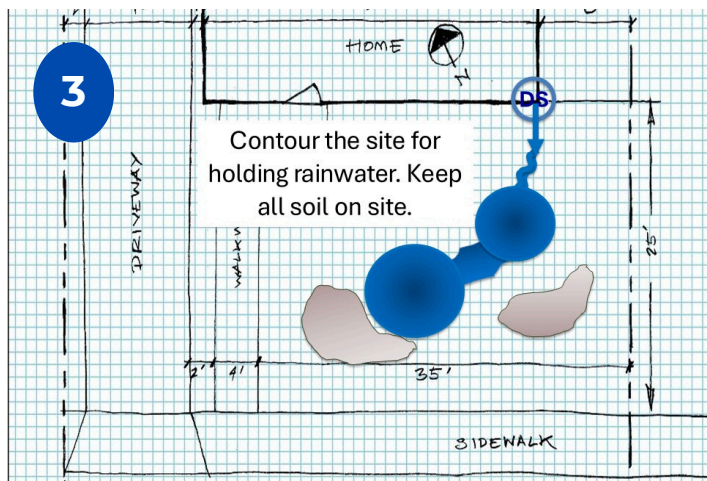
Irrigation Points of Connection



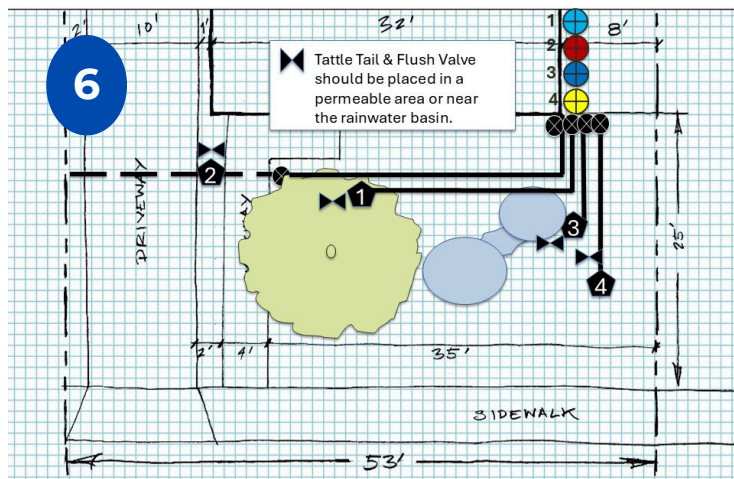
Gutters & Downspouts



Permeable Hardscape

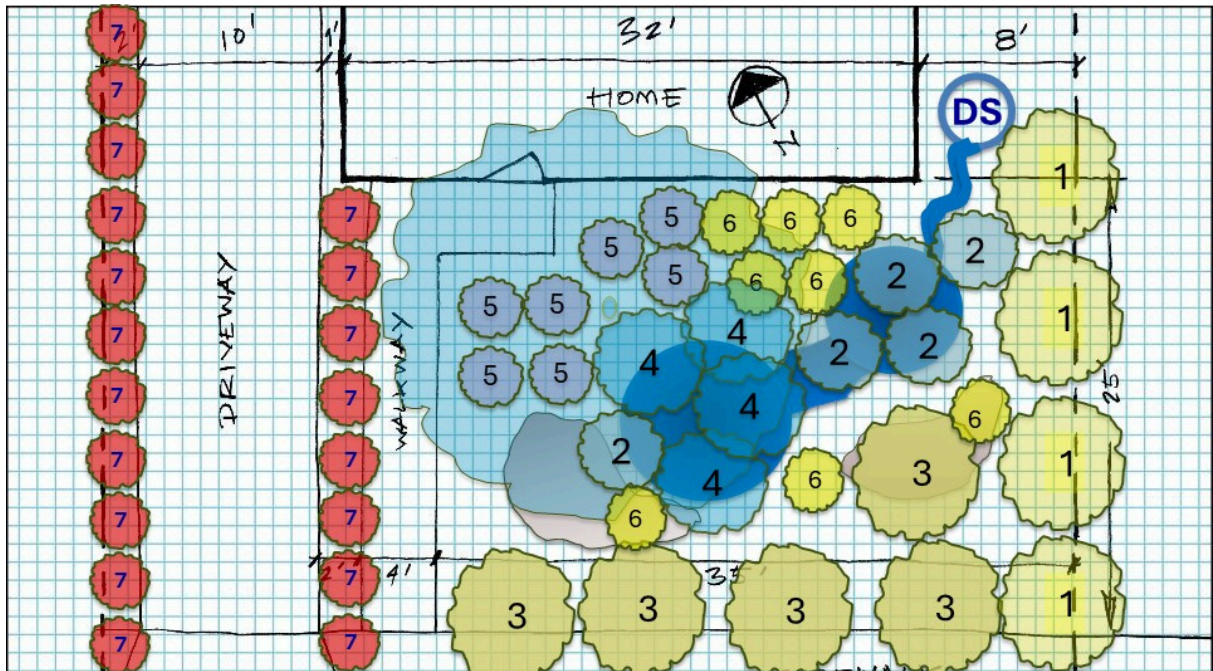


Basins and Berms



Drip Irrigation Plan

Double-check Your Plant List and Planting Plan



Botanical Name	Common Name	Height	Width	Sun/Shade	Water Needs
Trees					
<i>Quercus macrocarpa</i>	Bur Oak	60-80'	60-80'	Sun	Low
<i>Tillia cordata</i>	Littleleaf Linden	50-70'	30-40'	Sun	Low
<i>Prunus virginiana</i> 'Schubert'	Chokecherry	20-30'	15-30'	Sun	Low

Good job researching your plants and figuring out the plan. Now make sure those plants are available for delivery to your project in the right timeframe for planting. Check with nurseries and expand your spreadsheet to include available container sizes and prices. Don't forget to include an allocation for delivery and handling (taking off truck, staging, etc.)

Make a list of nurseries and resources for purchasing plants and seeds.

Orient Yourself



Always call Montana 811 before you dig. Utilities and communications are marked so you don't damage infrastructure.



Run down this check list:

- Are any City or County **Permits** Required? Obtain them and follow the directions!
- Check with Your **HOA** - do you need approvals for this project?
- Apply for **Rebates** and Obtain Pre-Approvals
- Confirm **Fire Regulations**

You're Almost There - Final Steps Before Digging:

1. **Clean up Your Property** and remove trash and debris, weeds, dead plants.
2. **Mark the Project Area** with chalk paint.
3. **Make Sure You've Done All Your Research** - go to nurseries, source your bulk items like mulch, compost, and rock.
4. **Delay Gratification** - delay purchases of furnishings, lighting, and other "fun" things for the project and focus instead on getting the infrastructure and planting in place.
5. **Invite Neighbors and Explain** what's about to happen - it's a risk, but it may pay off because neighbors may enable larger bulk purchases or discounts on work. Construction can be annoying to the whole neighborhood, so agree on work and noise hours, address any safety concerns, and share the name of your designer and contractor.
6. **Designate Areas for Equipment** and materials storage and plan to protect those materials from the elements with tarps.
7. **Protect Trees** from construction damage by fencing off root zones.

Installation Sequencing

Lay out a Construction Calendar

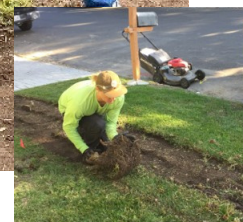
This allows you to keep the project on track, schedule contractors and artisans, secure sign-off on any permits, and arrange for deliveries and storage of those materials.

Order Equipment, Materials, Arrange Deliveries

- Order organic material, boulders, gravel, flagstone, and any plumbing and drainage materials.
- Arrange to rent a sod cutter and dumpster, if necessary
- Order plants for delivery.

Demolition and Sod Cutting

- Cut and flip to prepare for sheet composting
- Trench edges of the hardscape
- Save any organic materials like woody debris for use in hugel mounds.
- Put fencing around trees to protect the root zones and post signs discouraging dumping of materials near the trees.



Install Gutters and Downspouts

Contour for Rainwater Capture (Berms and Basins)

- Include any conveyances, catch-basins, or drainage pipes
- Large rocks go first, then smaller stone and gravel. Save the smallest gravel for installation after planting is completed.



Trenching and Irrigation Valves

- Install Irrigation valves, lateral lines, pressure regulation, flow meters, landscape sub-meters and points of connection in each zone.
- Sleeve under hardscape areas with 2" - 4" pipe for electrical and other utilities or communications
- Sleeve for low voltage lighting wire

Complete Grading

- Stockpile soil and be sure to protect trees from construction damage
- Contour site for rainwater capture (150 sq. ft. 6" deep for every 1,000 sq. ft. of roof area)
 - Do not remove soil; use it to create your contours
 - Install boulders and materials for creek beds or swales
 - Install rain barrel (or cisterns)
- Add organic matter to the soil
- Install catch basins and any drainage pipe

Install Retaining, Firebreaks, Permeable Hardscape and Fence Posts

Layout the Soil Lasagna

- Time to build the soil sponge! (compost, paper, and 3-4" of mulch in the planting areas) **See p.10**

Take Delivery of Plants

Reject any plants that are root-bound in the containers or not as expected

Layout the Plants

- Lay out your Planting Plan using flour or chalk
- Plant trees and large shrubs first
- Make your "in field" adjustments
- Make sure the distance between plants is correct
- Go one area at a time that easily can be managed; keep plants well hydrated in the containers, place in shade until planted
- Install plants into the Soil Lasagna
- If drainage is poor, auger holes in compacted areas and wait to complete
- Thoroughly and completely water holes, plants, and surrounding soil; 5 gallons of water for every 1 gallon of container size
- Cover all with 3-4" of well-composted mulch

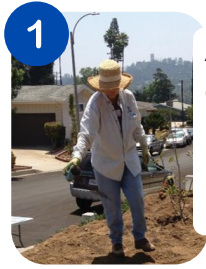
Complete Irrigation Installation

- Layout the drip irrigation tubing and/or install emitters if using point source drip.
- Convert spray heads to drip or install new drip lines
- Install the "tattle tale" and flush valve assemblies
- Install the irrigation controller

Create an "As Built" Drawing of the Project

Remove Grass & Build Soil

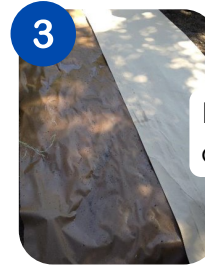
Sheet Composting/Sheet Mulching in EVERY Landscape



1 Add 1/4" - 1" compost or humates (a little goes a long way)



2 Water everything well



3 Roll out paper, overlap by 6"



4 More water. Add 1-2" of mulch



5 Add more water. Add another 2" of mulch.



SKIP the weed fabric. It keeps organics from breaking down and making the healthy soil sponge.

Order Your Compost and Mulch in Bulk

Compost – 1,000 sq. ft. 1/4" – 1" needs 1-3 yards

Mulch – 1,000 sq. ft. 3-4" needs 10-12 yards

What's the square footage of your landscape?

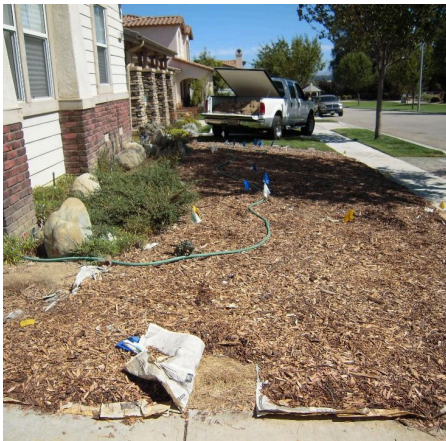
How much compost and mulch will you need?

Sq. Ft. x 0.003 = Yards of compost needed per Inch per Sq. Ft.

Keep Grass in Place: Cool Season Grass

If you have **cool season grass** you can keep it in place and sheet compost over top. You will need to wait about 4 months and keep it wet while it decomposes, and the end result is soil ready to be contoured and planted. While this option takes longer, it is less expensive than sod cutting.

More mulch is needed after contouring and planting is completed. Always keep 3-4" of mulch on top of the soil to keep the ground cool and the moisture in.



Cover Grass with Sheet Composting



Contour Later (4 months)



Plant After Contouring

Sod Cut and Remove: Goes a Lot Quicker

If you have **warm season grass or want to move quickly** you will have to remove the grass before sheet composting. You may need to rent a dumpster to dispose of the grass. Once the grass is out, contour the site. Then sheet compost over the contoured landscape and plant on the same day. Top it all off with enough mulch to have 3-4" around all of the plants.



Rent a Sod Cutter and Remove Grass



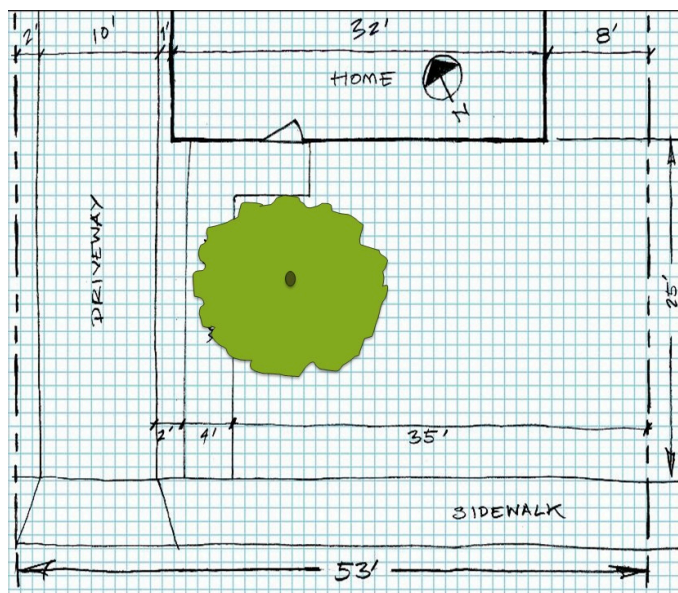
Contour Right Away



Sheet Compost After Contouring

Planting For Success

Plant trees first and then the rest. This could happen before contouring for rainwater capture, or afterward before the rest of the plants were laid out.

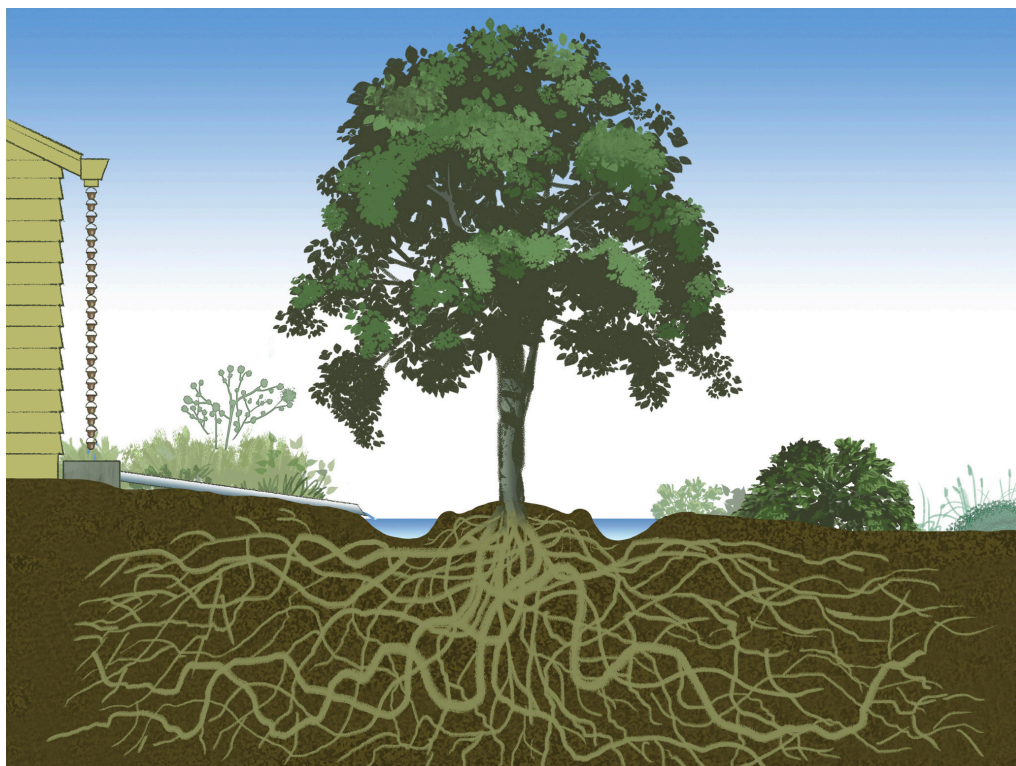


Respect Tree Roots

Don't mess with the grade around trees. Plant at least 3" above the surrounding grade and do not pile up any soil on the roots of or at the base of an existing tree. This is true for mulching as well. Do not make VOLCANOES of mulch around trees. No mulch should touch the trunk but do keep area under canopy well mulched.

Place basins around the tree rather than placing the tree in the depth of the basin.

Install cross-staking on three sides.



Space Plants Correctly



Once plants are laid out make sure the space between them is correct. You can use your body to do a quick measurement. When a plant label shows the mature width at 5', believe it and give that plant enough space.



2" Plugs

Select Smaller Plants, or Bare Root Trees



Bare Root Trees



Dirt Flats = 81 Plants



4", 1 & 5 Gallon Plants



15 Gallon Trees

Select the smallest sized plants you can and make sure you **add 5 gallons of water for each 1 gallon of plant container size when you are planting.**

If you are able to plan ahead, consider purchasing plants in 2" or plug size. Many plugs have good root structures and are less expensive than 4" or 1 gallon.



Make it Fun! And Save Money



Experiment with home-made art. Plant to attract birds and other animals, and build habitat-supporting garden elements.



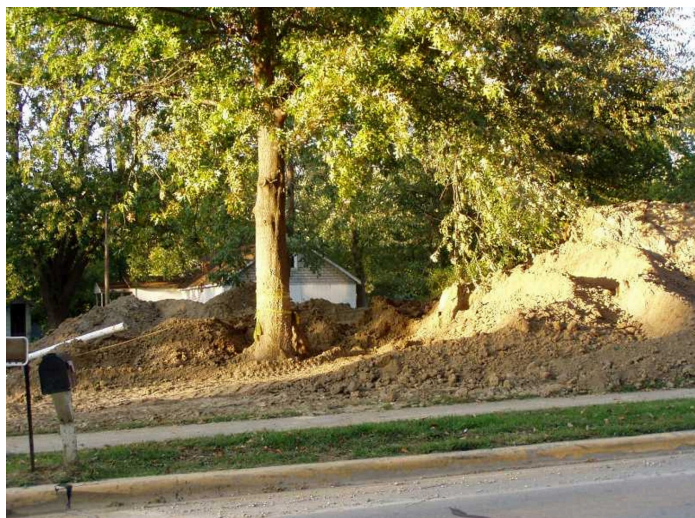
Everyone loves low voltage cafe lights.. Save extra construction supplies and reuse them.



Explore tag sales and thrift shops for furnishings. and decorations. A bit of paint will bring the old things to life.



Save Money Less Maintenance



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Protect Trees

Trees provide significant value to your property, so don't threaten their existence by allowing soil to pile up around their roots, equipment to compact their roots, or cut the roots when trenching or installing hardscape.

Water Sufficiently at Planting

The best way to get plants off to a healthy start is to water them sufficiently at planting time. Remember 5 gallons of water for each gallon size of planting container.

Organize Planting Into Hydrozones

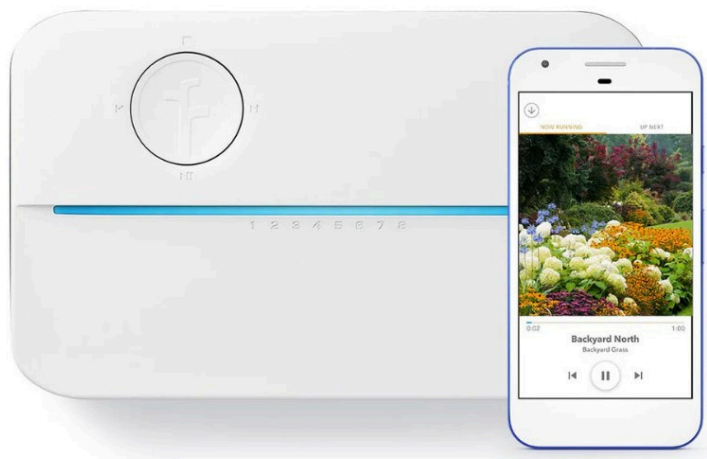
Add irrigation valves to add control to the watering of your landscape. Make sure to separate plants by their water requirements so it is easier to irrigate them and program the irrigation controller.



1. Lawn (High)/Sun/Spray
2. Edibles (High)/Sun/Drip
3. Natives (Low)/Shade/Drip
4. Natives (Low)/Sun/Drip

Install Weather-based Irrigation Control

Look for WaterSense labeled irrigation products to save a proven 20% of water versus an unlabeled and verified product. A weather-based irrigation controller manages the irrigation schedule according to weather in your area. Look for rebates on controllers and other irrigation equipment.



Practice Integrated Pest Management

1. Identify/Monitor

Determine the cause

2. Evaluate

How bad is damage? Will you have to act?

3. Prevention

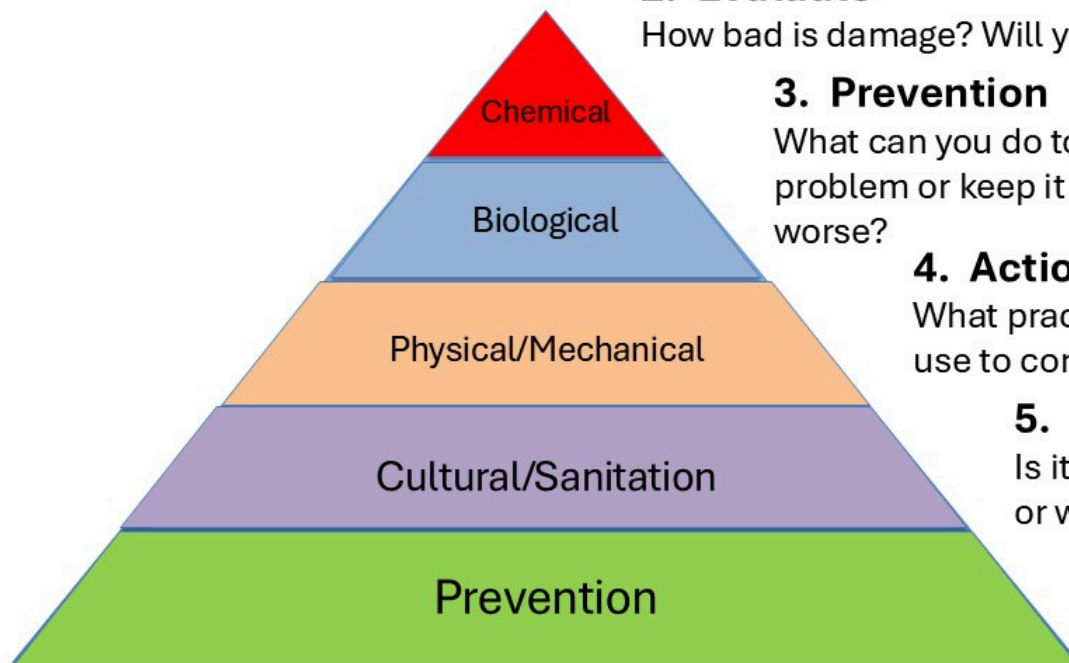
What can you do to prevent problem or keep it from getting worse?

4. Action

What practices can you use to control problem?

5. Monitor

Is it getting better or worse?



Take Notes Here



CLIMATE READY
LANDSCAPE ACADEMY