TURF CONVERSION

HOW TO CONVERT TURF IN RESIDENTIAL LANDSCAPES IN THE ROCKY MOUNTAIN REGION

Dig Studio

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Dig Studio

THE WHY

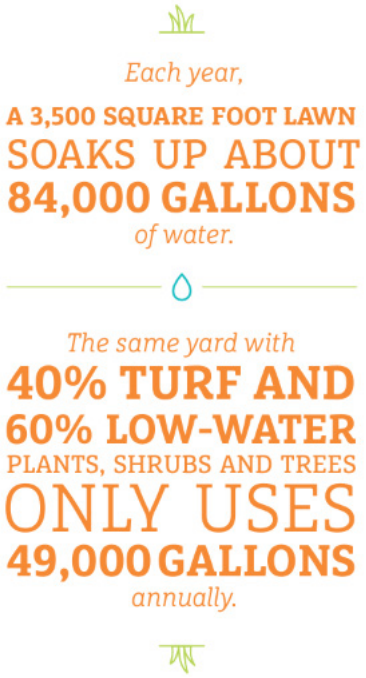
THE WHY

The increasingly tangible and visible impacts of climate change are causing many of us to ask ourselves, “What can I do to help minimize my footprint?” With warming temperatures and longer, more extreme periods of drought on the horizon, the seemingly lowest hanging fruit might be in our own backyard (or front). **The bluegrass lawn that is the standard groundcover for most American homes, even in the West, is becoming less attractive as water bills increase and we learn more about alternatives to bluegrass.** Bluegrass is boring, and in the case of front yards it is rarely put to recreational use. Plus, it requires constant maintenance. Standard treatment calls for mowing, watering, fertilizing, and treating with chemicals for weeds, bugs and grubs. It is not native to our landscape or really any landscape west of Kentucky.

Because of global warming and the requisite drought that it brings, the Colorado River watershed is drier than it has been in over 100 years. This is forcing many states and municipalities to ask residents and businesses to reduce water usage, especially for landscape uses. The largest user of the Colorado River is agriculture, which uses 80% of the water. But given how important agriculture is to our region, and to those west of us that supply the majority of our food, residents still need to take steps to conserve. Landscape water use accounts for as much as 50 percent of the residential water used across the state of Colorado, most of which is used on turf. [1]

Pollinator populations are declining at rapid rates for multiple reasons, but loss of habitat biodiversity is one contributor. It is clear that bluegrass lawns are a monoculture that does not provide any benefits to pollinators. In addition, the use of pesticides containing neonicotinoids to control insects that are harmful to our lawns may actually harm our most important pollinators, bees.

Alternative landscape treatments can reduce the application of pesticides, herbicides and fertilizer while providing valuable food and habitat for pollinators. In addition, they can be water-wise, beautiful and low maintenance! But, only when done right. We hope that this guide will provide you with a strong foundation for taking on this challenge and suceeding.



H2Overhaul Kit,
Thornton Water

BEFORE WE JUMP IN

We'd like to take the time to define a few words.

ColoradoScape - ColoradoScaping is about living within the semi-arid climate around us. It's an inspired landscape that's vibrant through all of Colorado's seasons and doesn't impose itself on Colorado, but reflects it. ColoradoScaping integrates principles of xeriscaping. [2]

Mulch - Mulch is any material used to cover bare soil and under plants within a landscape. It can save water, inhibit weeds and improve soil. The most common types of mulch are wood chip and gravel mulch.

Xeriscape - Xeriscaping (zer-i-skaping) is a word originally coined by a special task force of the Denver Water Department, Associated Landscape Contractors of Colorado and Colorado State University to describe landscaping with water conservation as a major objective. The derivation of the word is from the Greek "xeros," meaning dry, and scape meaning the pattern of the landscape – thus, xeriscaping. [3]

Xeriscape is **not** removing all plants or all water from a landscape, and should not be pronounced 'zero-scaping' as this perpetuates this misunderstanding.

PLANNING

You're considering removing all or part of your lawn in order to conserve water, and perhaps add in beneficial biodiversity and environmental elements. Congratulations! We at Dig Studio are approached frequently by friends and clients asking how to best go about this task. We have found that there is no *one size fits all* solution, nor is there a singular 'one stop shop' for answers. Dig Studio took it upon ourselves to research, compile available resources, and offer a range of solutions to meet the diverse needs of homeowners and HOA's, which also align with our firm's ethics and philosophy. We hope you find this information valuable.

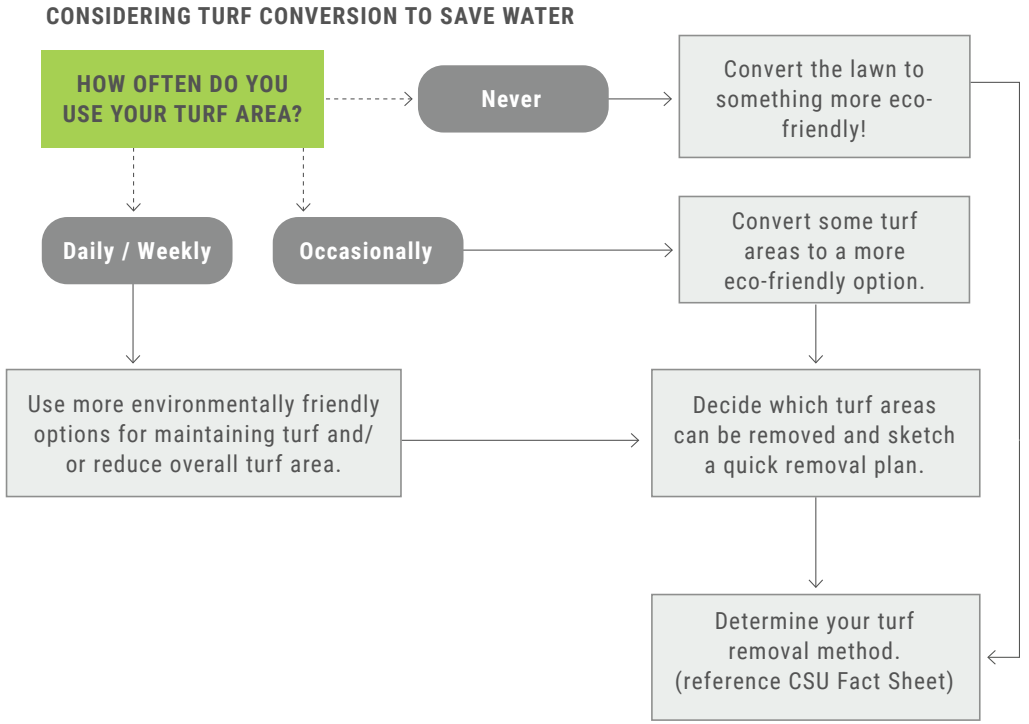
ASSESS YOUR EXISTING TURF AREA

Consider how your lawn is used before you ever think about how it looks. How is your existing turf being utilized? Do you have dogs or children that play on it? If so, could a more drought-tolerant lawn function for your uses? If not, could the space serve you, or the environment, better by being converted?

How is your lawn performing? Does it struggle in some areas or are there any challenges with maintenance? If you have locations where turf is appropriate, you may still wish to remove it in areas that are difficult to water and maintain. These are could include:

- along fences
- on slopes where water tends to run off and/or mowing is difficult or dangerous
- corners of lawns where it is hard to water without overlapping into other areas
- narrow strips of lawn, less than 8' wide
- irregularly shaped lawn areas that do not fit the spray pattern of most sprinklers.
- deeply shaded areas beneath trees or shrubs, along north sides of walls and fences, between buildings.
- areas with south or west exposures which experience the greatest water loss. [4]

Aim to keep bluegrass turf areas near the house and in areas of high use.



PLANNING

MAKE A PLAN

Plan your turf removal areas with a sketched plan of your yard. Note which turf areas have existing trees you wish to keep, which areas are on a slope, and how each area is currently watered. This information will help you decide how to remove your turf.

Consider what these areas could become. Will they be replaced with drought-resistant planting? Or perhaps you need a patio for entertaining? You don't need to have it all figured out at this point, but as you move forward in the process it will be good to have some ideas in mind.

Be realistic. Consider how much time you have to devote to this project, your skill level, and your budget. Will you do all or some of the work, hire help, or enlist family and friends?

Expect less maintenance, but not no maintenance. Xeric plants need to be irrigated until established, which could run one to two seasons, and during periods of prolonged drought. It is also critical, especially early on, not to let weeds take over. Initially there will be a lot of open ground that weeds would love to fill up. [5]

We endorse fully planning your new landscape at this phase, but know that can get overwhelming for some homeowners. Identifying where you can remove turf is a huge first step.

Once you've chosen the portion(s) of your yard to retrofit, make a schedule to complete the transformation. Remember that the best time of year to plant new trees and shrubs is in the spring or fall, and that new plantings will need irrigation for establishment.

If the area you've chosen is large, consider implementing your new landscape in phases so you can get an idea of your new garden's maintenance needs and which plants do well in your yard.

RESEARCH

Check with your City and State to see if there are turf removal rebates available.

Don't forget community / HOA regulations. If your neighborhood has covenant restrictions or a review process for landscape changes, you will need to submit your plan with enough lead time to have it approved before the project begins.

SENATE BILL 178 (2023):

For HOA's, Colorado Senate Bill 23-178 allows homeowners to swap their grass lawns for landscaping that needs less water to maintain, forcing HOAs to accept the alternative landscaping. Under current law, a unit owners' association of a common interest community may not prohibit the use of xeriscape, non-vegetative turf grass, or drought-tolerant vegetative landscapes to provide ground covering to property for which a unit owner is responsible. There is, however, an exception authorizing an association to adopt and enforce design or aesthetic guidelines or rules that apply to non-vegetative turf grass and drought-tolerant vegetative landscapes or to regulate the type, number, and placement of drought-tolerant plantings and hardscapes that may be installed on a unit owner's property, on a limited common element, or on other property for which the unit owner is responsible.

IRRIGATION

IRRIGATION

UNDERSTAND AND ADJUST YOUR EXISTING IRRIGATION SYSTEM

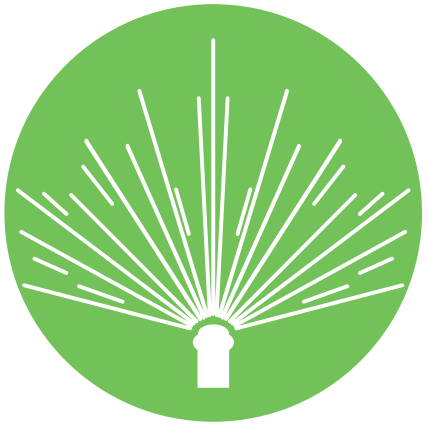
Do you have an irrigation system? Do you have a master plan for that system? Is it drip, spray or combined? Is it run by a smart irrigation controller? These are all questions that need to be considered.

Proper irrigation practices can lead to a 30 to 80 percent water savings, and giving your existing system a make-over can go a long way toward reducing your water use. Check existing sprinkler system for overall coverage. If areas are not properly covered or water is falling on hardscapes, adjust the system. This may mean replacing heads, adding more heads, or adjusting to result in greater efficiency. [6]

Turf areas should be irrigated differently than shrub borders and flower beds, and be placed on different zones. Replacing spray heads with a drip system in shrub beds will greatly reduce your water consumption. Examine zones closely and correct inefficiencies in irrigation system design.

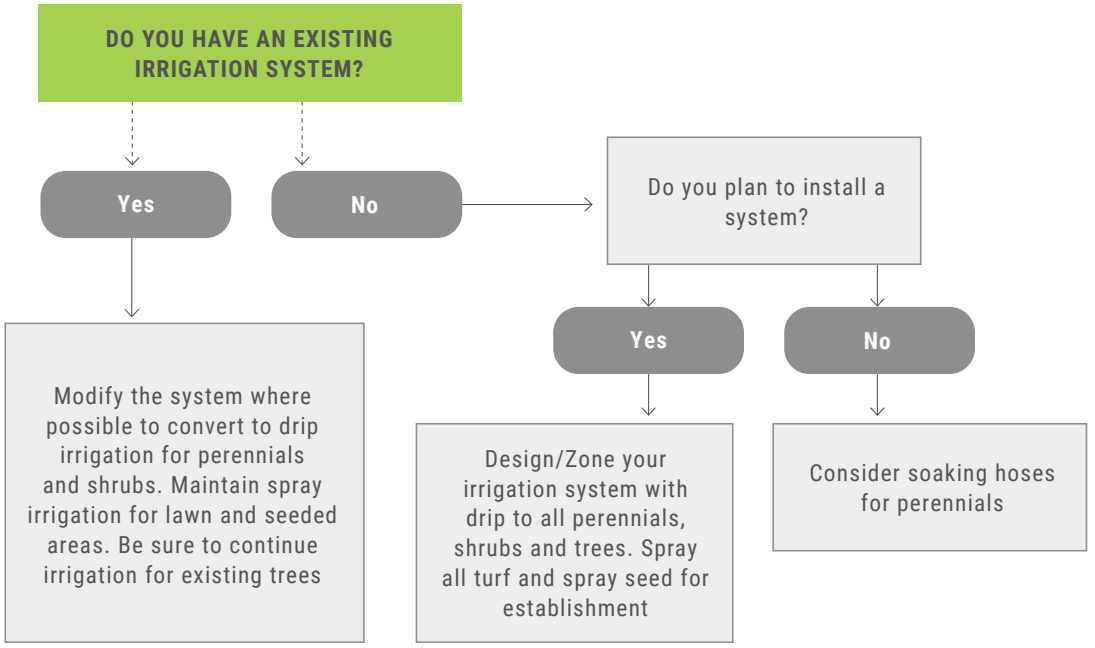
Consider switching to a smart controller. A smart controller can offer many benefits including weather monitoring and remote access. Having your system shut off automatically when your area has recently recieved rain, or is currently experiencing high winds, is extremely valuable for water savings and health of your landscape. Check with your water utility provider to see if they offer rebates for installing water efficient products.

ADJUST THE SYSTEM FOR TURF REMOVAL



Perhaps you are switching a turf area to low-water use planting. You will want to adjust the irrigation to accommodate the new plantings. This could mean replacing spray heads with a drip system or moving/removing heads or the entire zone. Be sure to consider the future size of plants and how they might impact irrigation coverage, as well as access to the system components for maintenance.

IRRIGATION OPTIONS



IRRIGATION

If you don't already have one, make a plan of your irrigation zones and adjust the watering times for the exposure, slope and type of planting. North and east exposures need less frequent watering than south and west exposures. Apply water to slopes more slowly than to flat surfaces. Ideally, these are different irrigation zones. Avoid frequent, shorter sprinkler zone times that result in shallow root development. [7]

Consider a drip system for outlying shrub borders and raised planters, around trees and shrubs, and in narrow strips where conventional above ground systems would result in water waste.

Compacted or clay soils can result in quick puddling and water runoff. Soils need aeration with machines that pull soil plugs in order to avoid this situation. In the next section we will talk about methods to further improve your soil.

Mature trees growing in lawn areas are accustomed to regular watering. If you remove grass, in order to maintain the tree's health you must continue to water regularly, though it can be less frequently. Apply water at the dripline (area of soil directly underneath the tips of the branches) where roots can absorb it, rather than next to the trunk. This can be accomplished by converting an automatic spray irrigation system to a drip irrigation system. Trees should be watered on their own irrigation zone, typically to a 12" depth across the drip line - four times per month for small trees and two times per month for large trees.

Rebates: Check with your water utility to see if they offer rebates for installing water efficient products like spray nozzles and controllers.

APRIL – SEPTEMBER TREE WATERING SCHEDULE

	Small Trees			Medium Trees			Large Trees		
	Weekly (10 gallons/inch)			Three times a month (10 gallons/inch)			Two times a month (15 gallons/inch)		
Trunk size in diameter (inches)	1"	2"	3"	4"	6"	8"	10"	12"	14"
Watering Device									
 Deep root needle 2 gal/min	5 min	10 min	15 min	20 min	30 min	40 min	75 min	90 min	105 min
 Soft spray wand 4 gal/min	3 min	5 min	8 min	10 min	15 min	20 min	38 min	45 min	53 min
 Soaker hose 2 gal/min	5 min	10 min	15 min	20 min	30 min	40 min	75 min	90 min	105 min

Water Wise Landscape Handbook, Denver Water

TURF REMOVAL

TURF REMOVAL

There are many ways to kill or remove turf. You will want to be thorough in this step, so that you are not stuck pulling grass out of your newly renovated landscape. We recommend unsing one of the following four methods as they are the least harmful environmentally.

Dig it out. For smaller areas, and around tree roots, sod can be dug out by hand. When you have the turf removed, shake off the excess soil, and pile it in an area to compost.

Sod cutter. Sod cutters enable the physical removal of turf at a minimum depth of 2 inches. This is the fastest method, leaves the majority of soil intact, and it works well for large areas (100 square feet or more). Contact a local tool supplier or garden center to rent a sod cutter.

You will want to plan ahead if you go this route. Getting rid of sod can be tricky. Whether you want to turn sod over and use it as compost, drive it to the dump or place a post on NextDoor.com, you'll want to devise what to do with leftover turf ahead of time.

Sheet covering / lasagna gardening. This method allows you to kill your turf by covering it with newspaper or cardboard, and layering the cardboard with organic matter or mulch. This method doesn't require the removal of turf, and it creates rich soil and provides a place to compost leaves, yard clippings, etc. However, this method is slow - it takes about six months to kill the grass. You can plant the following season. This method is not recommended for steep areas or large areas of grass.

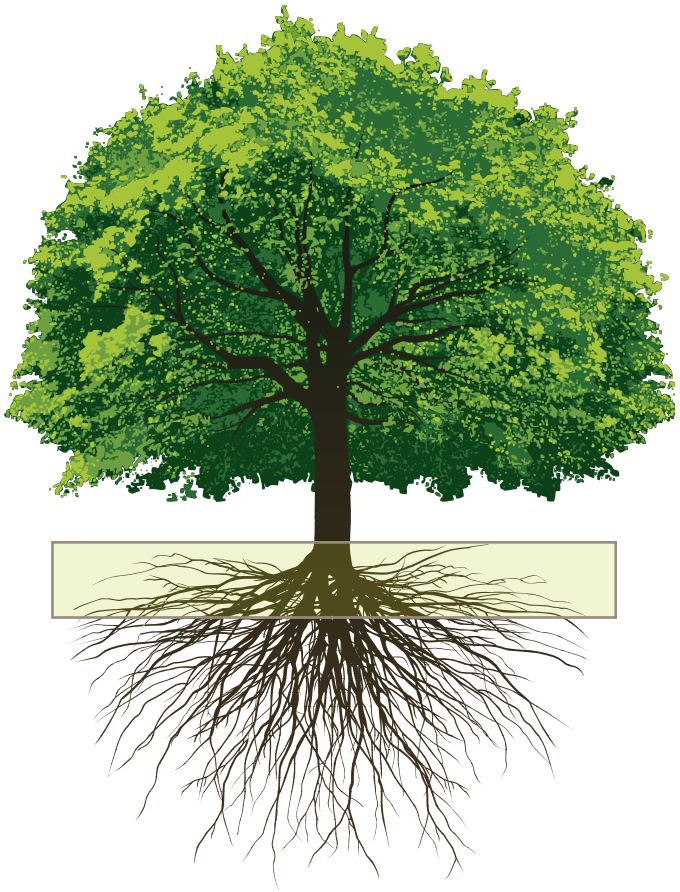
Horticultural Vinegar. This is a good alternative to using harmful glyphosate, and it's quick, yielding results in less than a week. Use 20 - 30% concentrate horticultural vinegar (available at garden centers and online) and apply to grassy areas you want to kill. This method is most effective during high temperatures.

Even though vinegar is an acid, it breaks down quickly in the soil and, therefore, is not likely to accumulate enough to affect soil pH for more than a few days. It is important not to apply near plants that you want to keep - manually remove turf located close to trees, shrubs and plants. Once the grass dies, dig it up and prepare the garden for planting, or rototill it into the soil. This method is not ideal for large areas.

Image of Sheet Covering Method, Wild Ones Front Range Chapter, 'Replacing Turf - Goals and Approaches'

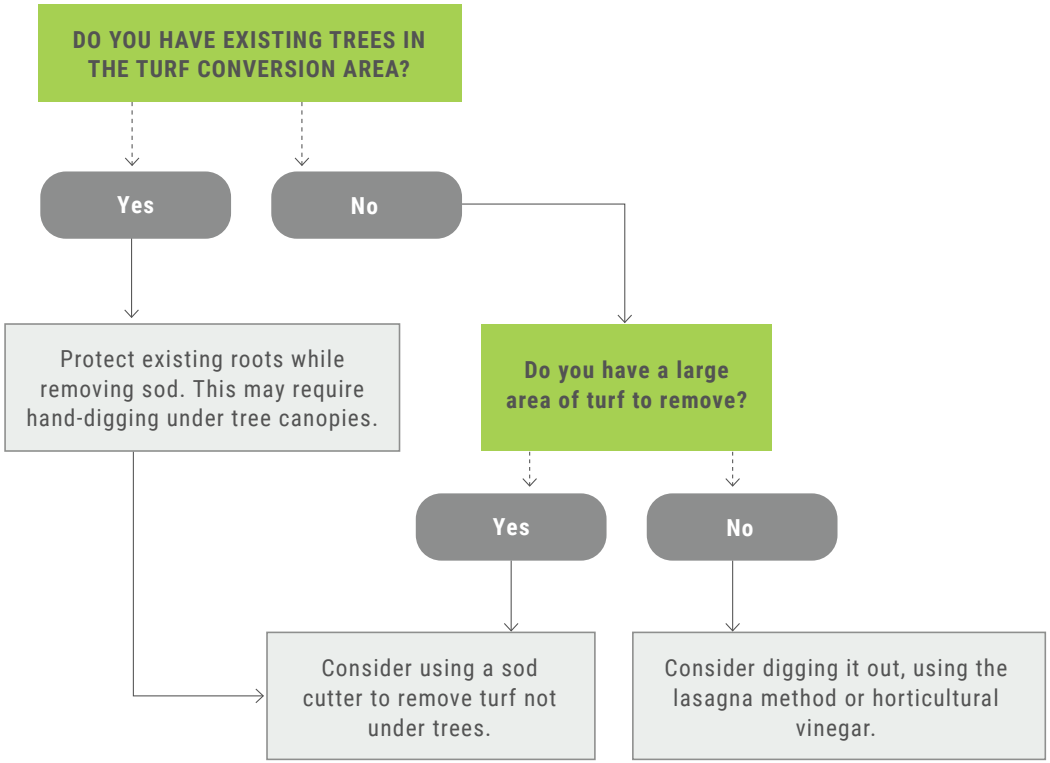
TURF REMOVAL

A Note About Trees: Tree roots are extensive. Widespread rototilling and trenching can disturb roots and damage the tree. Instead, carefully remove unwanted grass under trees by hand digging.



Critical Root Zone
Waterwise Landscape Handbook
Denver Water

DETERMINE YOUR TURF REMOVAL METHOD



SOIL

After removing your turf, but before installing a new landscape, is the best oportunity to improve the soil with soil amendments.

Soil amendments are materials added to soil to improve its physical properties such as water retention, permeability and structure. Adding a good amendment thoroughly, 6-8" deep, encourages deep roots that can access the water stored in the soil and reduces the need for wasteful, frequent water applications. [8]

Before you add the appropriate amendments you must first evaluate your soil. You can do this by digging up a sample from the area you plan to convert and sending it to your local University Agricultural Extension service. Follow their recommendations and requirements for the quantity of soil sampled and request their recommendations for amendments that are suitable for the specific replacement plantings you plan to install - xeric plantings, native grass, perennials or shrubs. If you do not have access to an extension service, you can bring a sample of your soil to a local garden center for advice on amendments typical to your area and for your future landscape type.

Native grasses that are chosen correctly for the region, site, and aspect do not need heavy amounts of nutrients added to the soil to thrive. But they may need what are known as soil conditioners. These include Mycorrhiza, humus, and other organic options. These can be applied directly to the surface ahead of seeding without tilling. Biochar or other carbon based organics may be helpful additions for native grass if you plan to till in your amendments.

Shrubs, groundcovers, perennials, and ornamental grasses can benefit from amending the planting holes dug for each plant, but if you are doing a large area, tilling amendments in at a depth of six inches is easier.

There are two broad categories of soil amendments: organic and inorganic. Organic amendments include coconut coir, wood chips, grass clippings, straw, compost, manure, biosolids, sawdust and wood ash. They also include sphagnum / peat moss; however, this is not a sustainable alternative because of the large amounts of CO_2 released into the atmosphere as it is mined from bogs and marshes. Note that manure can be high in nutrients and salts which can be harmful to most native and some xeric plants. Inorganic amendments include vermiculite, perlite, pea gravel and sand. To do its work, an amendment must be thoroughly incorporated into the soil.

In our region, it is likely that you will encounter a large amount of clay soil while doing your renovation. In this case, there are amendments specifically made to break down clay into more workable soil, such as 'Clay Buster'.

Creating good soil takes time. Add organic matter annually to garden areas. In areas to be native sodded or seeded, add organic amendments as a one-time procedure.

Adobe Stock Photo

LANDSCAPE CONVERSION

LANDSCAPE CONVERSION

YOU'VE ARRIVED AT THE FUN PART - CONVERTING YOUR LAWN!

During the planning phase, you observed how your yard is used, assessed turf areas for conversion, and considered your desired uses. Now that you have completed previous planning, irrigation and turf removal steps, the exciting phase of transforming your landscape begins. The following are things to consider:

Purpose and aesthetic: If you intend to install plants instead of or in addition to renovated turf areas, take time to consider your goals. Are you hoping to attract pollinators and birds? Do you intend to include the plants as part of your water reduction strategy? Is the area shady, sunny, or a combination of both? Are you prepared to maintain plants over a season, or do you prefer plants that don't require much maintenance? Are you planning a defined area for plants or are you replacing an entire lawn? Carefully considering these questions will help you make selections to meet your personal goals and aesthetic.

Planning: Once you have answered the questions above, you can begin planning the landscape. There are many resources to help with planning, design, plant selection, and sourcing. A list of some of these sources is included at the end of this section. Example inspirational plans we created are included on pages 24 - 25 to help envision ideas.

Keep what you can. Take a hard look at the plants in your space and how they fit in the new scheme. You can't move a 25' conifer, but relocating shrubs and xeric perennials is doable and budget-friendly. For any higher water-use plants you wish to keep, using drip irrigation and a three- or four-inch deep layer of wood chip mulch can reduce the amount of water you need to apply to keep them looking good. Hardscape – pavers, gravel, and rocks – may already be in place or can be relocated.

Gather inspiration and knowledge. Visit public gardens with xeric installations such as Denver Botanic Gardens, Aurora's Water-Wise Garden, or The Gardens at Spring Creek.

Lawn grown from custom seed mix.

PLANT SELECTION

Some familiar garden plants can use as much (or more) water than a lawn. Using native and adapted plants not only saves water but can reduce the need for other garden inputs like soil amendments, pesticides, and fertilizers. [9]

Select the right plant for the right place. Consider the mature growth of the plant, as well as the sun exposure of the location.

Low water lawn: Native turf sod is rare and expensive, but is becoming more available. If the old lawn grass is still alive and you want to integrate low water grass, overseeded grass should be somewhat similar in appearance to the existing species. This guidance document from Colorado State University Extension provides guidelines on overseeding, installation, care and timing for integrating low water grass into an existing lawn. We highly recommend you consult this document if this is your goal.

Native Plants: Planting less-thirsty native species has the potential to lessen the burden on our water systems. When correctly sited, natives make ideal plants for a sustainable landscape. Native species require less external inputs such as water and fertilizer, and are more resistant to pests and disease when the planting site mimics the plant's native habitat.

Another great reason to go native is to restore habitat. Rapid urbanization in the state is reducing biodiversity (the number of different species found in a given area) as habitat is removed for building and road construction. Research has shown that landscaping with natives on a large or small scale helps maintain biodiversity that otherwise would be lost to development. Gardens planted with natives, even in urban areas, can add food, shelter and other important resources for wildlife, including mammals, birds and native pollinators.

Groundcovers: Ground cover plants are appealing for their variety of ornamental features that add interest to landscapes. They provide a variety of textures and colors, help to reduce soil erosion and can function as a transition between landscape spaces. They offer alternatives to turfgrasses in some situations.

Xeric ground cover plants may be the answer for difficult landscape areas. More on ground covers for Colorado can be found in this CSU Extension Fact sheet and 7.230, Ground Cover Plants. A resource listing of xeric ground covers, annuals, perennials, and ornamental grasses for Colorado can be found at the end of this section.

Photo taken at the Denver Botanic Garden

Annuals. Today people enjoy the wider availability of native and adapted plants from high altitude dry climates around the world. These plants provide color, texture and interest for a season before dying.

Grasses: Ornamental grasses add two elements to the garden experience that are not readily obtained from many other plants: movement and sound. Grasses also add a significant vertical presence to the winter landscape and are commonly left standing until spring.

Seed Mixes: If you have a large area that gets plenty of sun, you may consider planting a seed mix. We recommend utilizing a contractor with experience installing seed mixes. This will make procuring and installing seed easier. But it is possible to DIY.

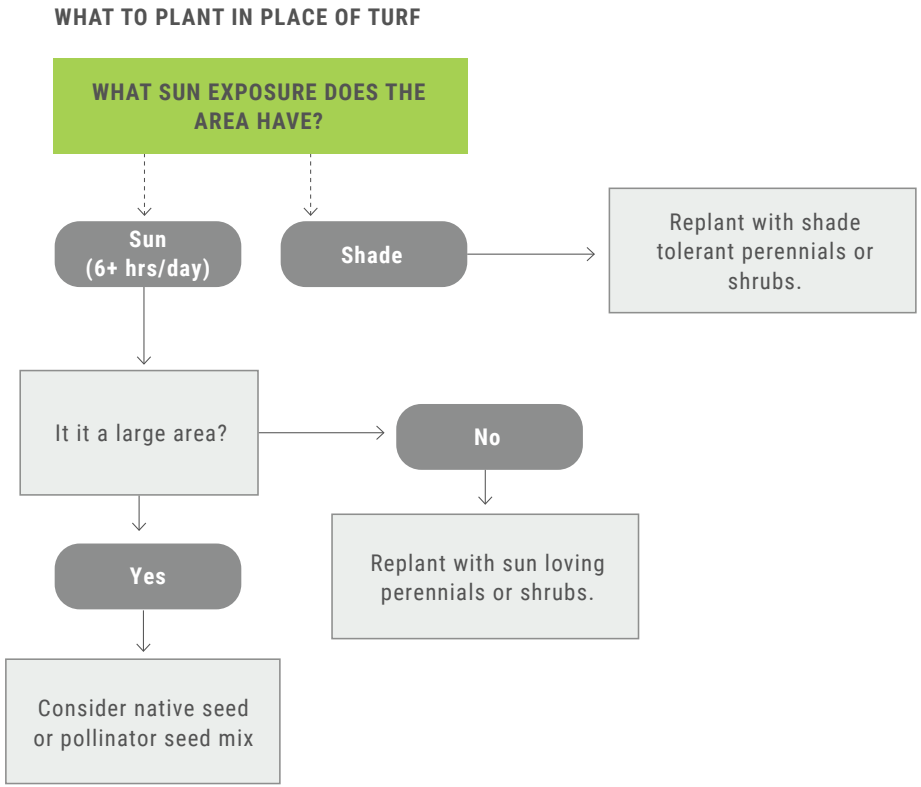
When picking your seed mix, make sure it contains native and adapted plants, and is formulated for your area. This will give you the greatest success with your mix, benefit local wildlife, and avoid introducing any invasive species. If you have pets, make sure the mix doesn't have plants that drop seed heads that would be harmful to them. High Country Gardens is one resource for purchasing seed on-line.

The best time to install seed is November to April, but when the ground is not frozen. A combination of broadcast seeding and drill-seeding will give you the best coverage. You may wish to purchase extra seed to broadcast on areas that do not come in well the next season. Rember that seed does need irrigation for successful establishment.

ROCK GARDENS

Many people's perception of xeriscape in the past has been 'lawns of rock'. Integration of rock and aggregate is certainly an option to reduce turf areas, but rock and gravel should be used thoughtfully in conjunction with plantings and should be minimized overall because too much 'rockscape' can increase the heat island effect in our environment.

The ideal location for a rock garden is a natural slope or terrace, such as those found at the side or rear of a house based on a split level or garden-level design. Use rocks of one geological type, for instance combining granite boulders with granite chips.Rocks are available from nurseries, landscape contractors and rock dealers.



An effective rock garden should have several large boulders of varying sizes and shapes. Set the boulder into the ground so at least one-third is buried. Place boulders in a natural way, following the grain of the rock. Position boulders to control soil erosion between rocks and to allow soil pockets of various sizes for plants. Use smaller, similar rock as a mulch.

Provide good drainage. Most plants suitable for rock gardens require well-drained soil.

A rock garden should be no larger than can be easily maintained. Rock gardens have high maintenance requirements, weed control being the biggest problem. Although most garden centers will encourage the use of a weed barrier fabric under rock installations, we do not recommend that as previously explained below in the mulch section

WATER

Note that even drought-tolerant plants require regular and relatively high amounts of water after transplanting or seeding until established. Depending on the size of plant you choose to install in your new landscape, this can range from days to years. In general, the smaller the plant, the more quickly it establishes. Only after xeric plants are well established can they be gradually weaned from supplemental water. Consider water availability when deciding on the timing of a change from a moderate- or high- water use landscape to xeriscape.

MULCH

Properly selected and applied, mulches in perennial and shrub beds reduce water use by decreasing soil temperature and exposure to wind and sun. Mulches also discourage weeds and can improve soil conditions. [10]

Many mulch options are available and appropriate depending on which plants you have chosen and your preferred appearance. A good practice is to try to mimic the natural "mulch" from a plant's native habitat.

Gravel mulch can be beneficial for many native and drought-tolerant plants since it allows water to drain away from their crowns quickly.

Wood mulch and other organic mulches have good water-retention capacity and can help mitigate compacted soil. Wood chips and compost are appropriate organic mulches as these materials break down, becoming an amendment to the soil. Organic mulch is preferred by some plantings because most soils in the Rocky Mountain west are low in organic content and need amendments to improve aeration and water holding capacity.

If the area is used primarily for annual flowers, it often is more practical to use a temporary organic mulch such as composted leaves, that can be turned under each fall. Make sure these materials have not been treated with herbicides or they may damage your landscape plantings. [11]

Apply most mulches to a depth of 3 to 4 inches. Mulch that is too deep can weaken plants and prevent water and air from reaching the soil. Apply straw, dried leaves, and similar materials to a depth of 4 to 6 inches.

Whichever mulch you choose, you do not need to apply weed barrier fabric beneath it—weed fabrics can inhibit water and air exchange into the soil and do not prevent weed growth in permanent plantings.

LANDSCAPE CONVERSION

RESOURCE LISTS

PLANNING

- Resource Central
- City of Ft. Collins
- CSU Extension
- Plant Select
- Audubon of the Rockies
- City of Thornton
- Denver Water

CONVERSION

- Garden in a Box - Resource Central
- Renovating the Lawn
- Retrofitting Guide
- Ground Cover Plants
- Flowers and perennials - CSU
- Ornamental grasses
- Rock gardens
- Xeriscape Resources - Denver Water
- Native Plants for Birds
- Bird Friendly Garden Designs
- Native Plants for Birds
- Native Plant Vendor List
- Low Water Native Plants for Colorado
- 10 Steps to a Pollinator Garden
- Plant Select Plants for High Plains and Intermountain Region
- Waterwise Plants - Colorado Springs Utilities
- Waterwise Plants - CSU
- Xeriscape Designs and Planting Plans
- Wild Ones Native Plant Resources

HOA RESOURCES

- Turf to Native Guidelines and Savings
- Reduced Grass Areas for HOA's

Brightview
Native Seeding in HOA area at Central Park

CONCLUSION

Succeed in Meeting Your Goals Through Careful Planning

If you are considering converting all or part of your lawn to native or low water plants, you are among the ranks of a rapidly growing trend among homeowners and landscape managers. By beginning with thoughtful planning, an approach for turf conversion can be developed at a scale that best fits your goals.

Beginning with a clear plan is critical for success! Consider existing conditions, including sun / shade balance, slope, soil type, desired maintenance and desired aesthetic for selecting the plant material best suited to meet your desired outcome and site conditions. Irrigation adaptation for the post-conversion landscape should be implemented prior to the installation of any new landscape.

There are many low water, high biodeversity alternatives to cool season turfgrass to meet you aesthetic and maintenance goals including low maintenance native grasslands, perennial and shrub combinations for year-round interest, or pollinator gardens to sustain biodiversity and habitat. Don't forget to incorporate new trees where possible for added heat island reduction, building cooling and carbon capture.

Please consult the resource links provided in this guideline - there is a tremendous amount of good information and research available to support you as you begin to plan your project.

Drop us a line and send a photo of your completed project - we'd love to hear from you!

Dig Studio
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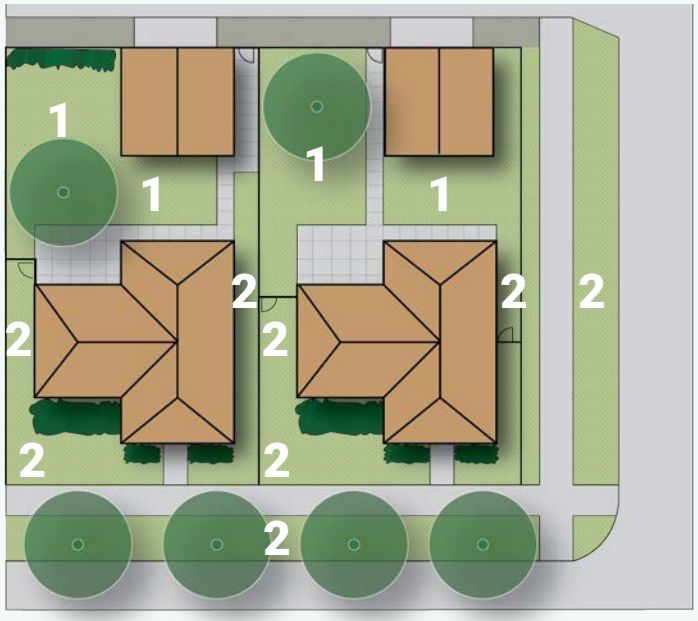
Pollinator median at Central Park North End neighborhood

EXAMPLE PLANS

Existing Alley-Loaded Lots



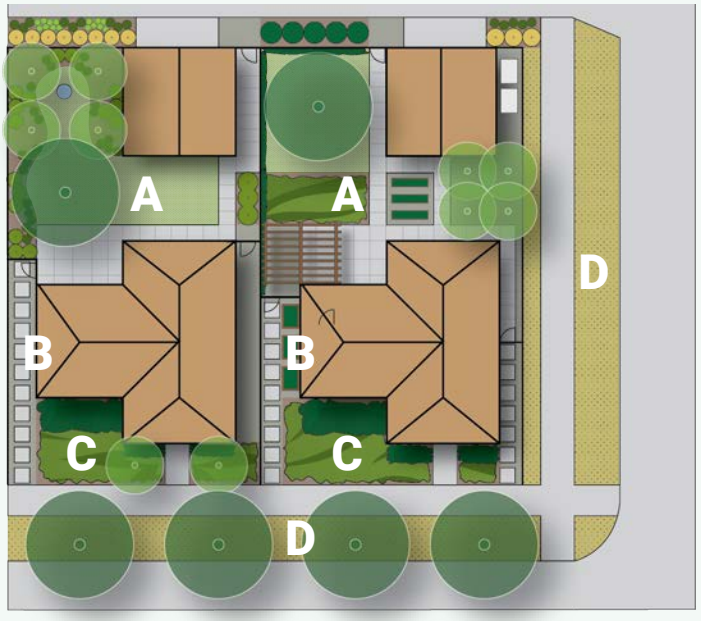
1: Functional Turf

Refer to the text and chart on page 7 for how to determine your functional turf area. Resize as needed with your choice of alternatives, such as those shown to the right.

2: Non-Functional Turf

Refer to the text and chart on page 7 for how to evaluate non-functional turf for conversion to any of the alternatives discussed throughout this paper or as shown to the right.

Inspirational Redesigns



A: Back Yard

Functional turf area retained under trees for shaded use and to avoid root disturbance. Landscape enhanced with additional plantings, bee hives, or raised garden beds.

B: Side Yard

Connections between front and back yard can become a storage area, raised garden beds, or compost and trash/recycling zones.

C: Front Yard

Low-water use plantings such as ornamental trees, drought-tolerant shrubs and perennials, or native / pollinator seed mixes.

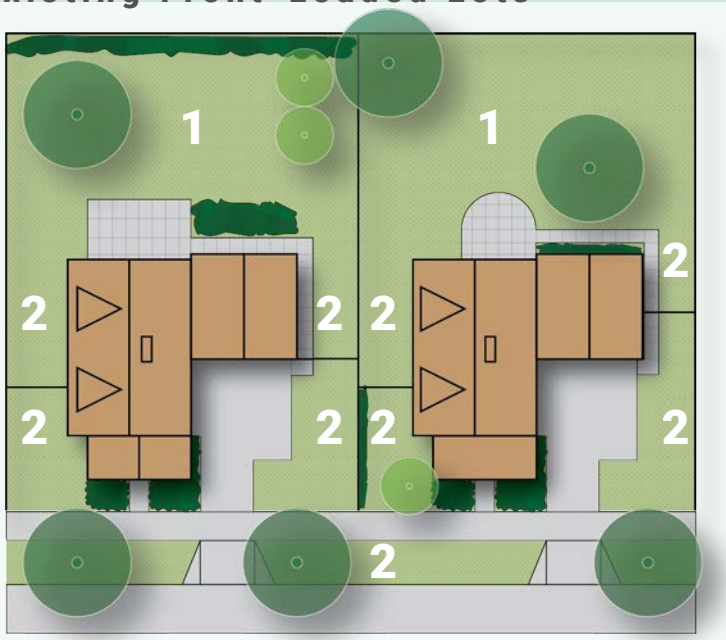
D: Roadway Strip

Replacement of turf to low-water use area using drought-tolerant shrubs and perennials, native seed mixes, or pollinator seed mixes.

KEY / LEGEND

EXAMPLE PLANS

Existing Front-Loaded Lots



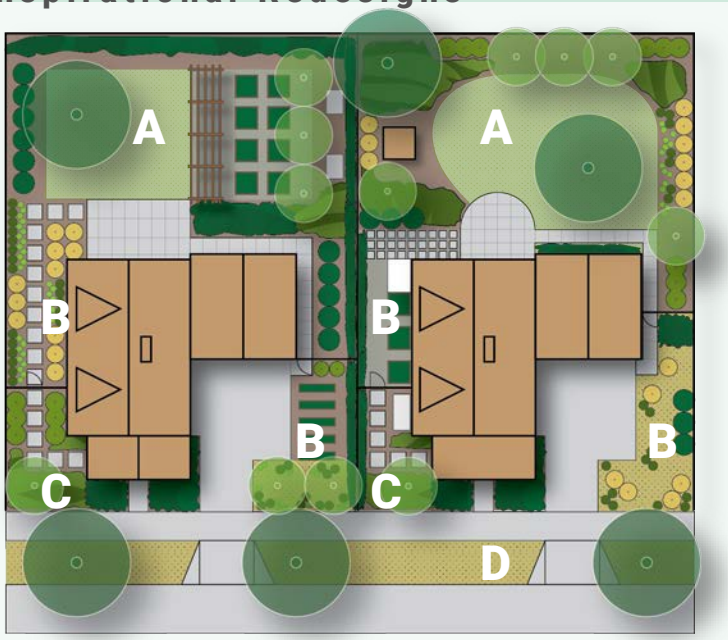
1: Functional Turf

Refer to the text and chart on page 7 for how to determine your functional turf area. Resize as needed with your choice of alternatives, such as those shown to the right.

2: Non-Functional Turf

Refer to the text and chart on page 7 for how to evaluate non-functional turf for conversion to any of the alternatives discussed throughout this paper or as shown to the right.

Inspirational Redesigns



A: Back Yard

Functional turf area retained under trees for shaded use and to avoid root disturbance. Landscape enhanced with additional plantings, bee hives, or raised garden beds.

B: Side Yard

Connections between front and back yard can become a storage area, raised garden beds, or compost and trash/recycling zones.

C: Front Yard

Low-water use plantings such as ornamental trees, drought-tolerant shrubs and perennials, or native / pollinator seed mixes.

D: Roadway Strip

Replacement of turf to low-water use area using drought-tolerant shrubs and perennials, native seed mixes, or pollinator seed mixes.

KEY / LEGEND

END NOTES

1 https://extension.colostate.edu/topic-areas/yard-garden/xeriscaping-retrofit-your-yard-7-234/
2 https://www.denverwater.org/residential/rebates-and-conservation-tips/remodel-your-yard
3 https://extension.colostate.edu/topic-areas/yard-garden/xeriscaping-creative-landscaping-7-228/
4 https://extension.colostate.edu/topic-areas/yard-garden/xeriscaping-retrofit-your-yard-7-234/
5 https://extension. https://denvergardeners.wordpress.com/category/turf-removal/
6 https://extension.colostate.edu/docs/pubs/garden/07228.pdf
7 https://extension.colostate.edu/docs/pubs/garden/07228.pdf
8 https://extension.colostate.edu/topic-areas/yard-garden/choosing-a-soil-amendment/
9 https://extension.colostate.edu/topic-areas/yard-garden/xeriscaping-retrofit-your-yard-7-234/
10 https://extension.colostate.edu/docs/pubs/garden/07228.pdf
11 https://extension.colostate.edu/topic-areas/yard-garden/mulches-for-home-grounds-7-214/

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