

## Waterwise Lawn Guidebook

This Guide is to help create the best landscape possible. A waterwise landscape should embrace our Grand Junction climate, invite pollinators, be fire resistant and protect the urban tree canopy. Take advantage of a rebate to help with costs while reducing water use long term. Review this entire guide prior to starting to design and apply for the program and rebate.



*Water wise landscaping picture with shrubs, perennials, and grasses, from Utah State University.*

The goal of this waterwise lawn program is to create a beautiful, waterwise landscape that fits our ecosystem in Grand Junction while saving water; make it a Grand-Scape.

**To be eligible for the program, the property must meet these requirements.:**

1. The property must be within the City of Grand Junction Water Service Area, meaning the water bill is paid to the City of Grand Junction.
2. Proposed residential properties have 500 - 2000 square feet of living turf grass. Non-residential properties qualify with 500 – 5000 square feet of turf grass to renovate.

**Commercial, Industrial, HOA Landscapes-** Businesses, industrial, institutional and HOA (Home Owner Associations) properties can benefit from this program. Qualify for removal of 500 to 5,000 square feet of living turfgrass. The property must be within the city water service area. There is an extra step of having a Community Development review and approval of changes to the landscape. There may be a fee associated with this update. Contact the City of Grand Junction Community Development at 970-244-1430 or stop by 250 N. 5th Street or email, [comdev@gjcity.org](mailto:comdev@gjcity.org). Otherwise follow the steps needed for the Waterwise Lawn Rebate.

**Application requirements:**

The application needs to include a landscape design, square footage of turf to be removed, pictures of the project prior to approval. Below are other criteria that must be met:

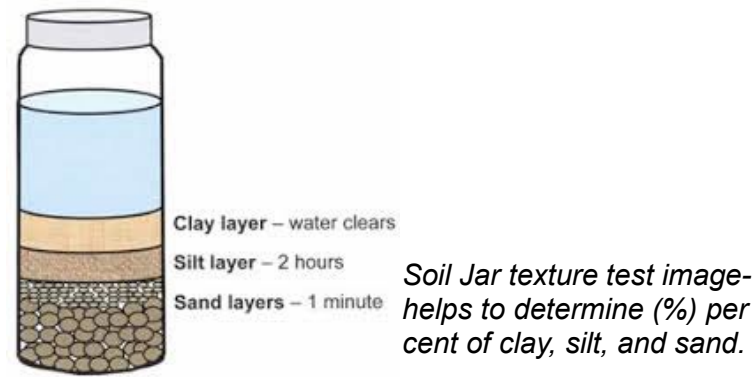
- Protect any trees, the goal is to maintain or increase the urban tree canopy. Water is needed during the process and protects the root system and above ground tree parts.
- Select plants fit the Grand Junction climate and that use very low to moderate water.
- Plan so that plants will cover a minimum of 50% of the space within 3-5 years.
- Include a 5' fire resistant perimeter, called the Home Ignition Zone (HIZ), around the structures (house, shed) within the turf conversion area.
- List the mulch type. We discourage weed fabric and encourage the use of wood mulch over rock, except for the HIZ area, since over time the mulch can improve the soil and won't be as hot in temperature as rock. Rock can be used with proper plant coverage.
- A minimum of 50% plant coverage within 3-5 years is required. Space plants based on mature size, typically listed by plant nurseries.

**Steps to create a waterwise landscape.**

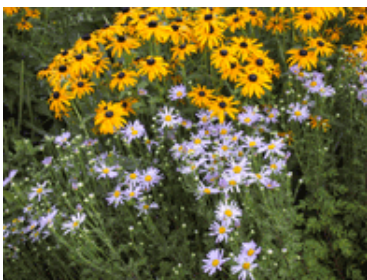
1. Examine the soil: This determines how much compost you need to add to the soil.
2. Plants: Start thinking about plant selection, pick ones that fit the Grand Junction environment and that can be grouped together in hydrozones (plants with the same water needs within an irrigation zone).
3. Creating a Design:
  - i. Develop a design and plan of action.
  - ii. Include a Home Ignition Zone, defined below.
  - iii. Map existing trees. Keep trees if possible. Talk to the Water Conservation Specialist, as an existing tree may count as part of your plant coverage.
  - iv. Themes including drought tolerance, pollinator habitat, water efficiency are encouraged. Add some fun with color themes, focal points, place to sit though not required.
  - v. Design resources
4. Remove the lawn
5. Amend the soil
6. Install irrigation: Check for other rebates like smart controllers, rain sensors or soil moisture monitor, and tree drip kit. This can increase efficiency and savings.
7. Purchase and properly install plants
8. Spread mulch, and then call for final inspection if participating in the rebate

9. Water efficiently
10. Maintain a healthy landscape

**1. Examine the Soils:** Soils are the foundation of the garden. It is always a good idea to do a soil test, to know what soil details to determine the amount of amendment or specific nutrients needed to improve it. It can also help with plant selection and maintenance. A soil test through a reliable laboratory or a [jar test](#), can help determine the soil texture and amount of organic matter existing. The routine soil test is typically a test that will give all the information needed. Contact Colorado State University (CSU) Extension for a list of reliable soil labs for our area.



Native soil content is 1-2% organic matter, in which very low water native plants can survive. Adjust the amount of organic matter to meet the needs of the plants (between 2-5%). Many non-native plants prefer organic matter closer to 5%. Use these results to determine the amount of compost added to the soil. Since our soil pH tends to be alkaline, avoid selecting plants that like acidic soils, high moisture and humidity or high organic matter, which is not our environment in Grand Junction. Contact the local CSU Extension office, 970-244-1834, 2775 Highway 50, Grand Junction, for a list of reliable soil labs. The Extension office can also help interpret the test results. [CSU Extension Soil Amendment](#).



*Black-eyed Susan and  
Aspen fleabane plants,  
Colorado State U. picture.*

2. **Plant Selection:** Pick out plants of very low to moderate water need, group them together by the same water need; ideally grouped on the same irrigation zone. Plan on spacing plants representing their spread or area covered at maturity (in about 5 years) so that plants cover at least 50% of the area not counting the 5' home ignition zone. Use the city plant suitable list, CSU plant lists or other reputable nursery sources which include spread size to determine mature size of plants. [Grand Junction Suitable Plant Spreadsheet](#)
- a. Native plant resources include:
    - i. Colorado State Native Plant Resources: [Native Plant Guides and factsheets](#)
  - b. Xeriscape means low water landscaping. It does not mean a rock scape. Many entities now use the term Water Wise, which means right plant in the right place. These resources are from universities:
    - i. [Colorado State University Extension Water wise and xeriscape resources](#)
    - ii. [Utah State University Trees, Shrub, and landscape information](#)
    - iii. [Utah State University CWEL Water-wise plants](#)
  - c. Low Flammable Plants- See the Home Ignition Zone section below.

### 3. **Creating a Design:**

- a. Develop a design:
  - i. Make sure to include all required elements in your landscape design. A landscape plan is required to acquire the turf conversion rebate. Plans can save you time and money. Make sure to include existing trees and hardscape, including walkways, driveways, patios, and similar elements. Note any existing plants that will remain. Include the 5' Home ignition zone.
- b. Home Ignition Zone (HIZ) is included in Fire Resistance Defensible Space Resources to consider in design:
  - i. For the turf conversion program in the City of Grand Junction Water Service Area, focus on the first zone of defense or the Home Ignition Zone (HIZ) which is the 5' perimeter zone around the building(s).
  - ii. Create a 5' fire resistant border (HIZ-Home Ignition Zone) around the home and include this area in the Waterwise Lawn Plan. This is where wildfires can become house fires.
  - iii. Use material(s) that are easy to blow or rake leaves away. Avoid using or placing flammable materials in this area.

- iv. Our grant does not allow for use of concrete; however, it allows for use of permeable materials. Some suggested permeable fireproof materials include granite trail mix (fine rock that compacts), a combo of rock and flagstone, flagstone, pavers, other rock that is easy to keep debris out or similar materials. So be creative; this could be a good walkway.
- v. Want to learn more on this topic, the Colorado State Forest Service has the best information on this subject for Colorado. [Home Ignition Zone Checklist Website](#)
  - 1. [Wildfire Risk-Own Your Zone Home Priorities](#)
  - 2. *Low-Flammability Landscape Plants:* [CSU Fire resistant plant materials](#)
- c. Existing Trees are to be maintained in good health through the renovation process.
  - i. Trees located in the tree lawn (the strip between the curb and sidewalk) are the property of the city but are required to be watered and fertilized by the homeowner. The water conservation specialist or city forester can help determine if trees are healthy or not.
  - ii. Existing trees in an area of proposed turf conversion will count for a maximum of 25% coverage, so half of the 50% required. The Water Conservation Specialist will use her professional judgment to determine the specific percentage based on the tree species, size and health of the tree and how much area the canopy is covering. Trees benefit from under canopy plants which provide another source of moisture and shade the ground. Dry, shade-loving plants are a good choice in this situation.
  - iii. The addition of new trees is encouraged as the Cities Urban Tree Plan goal is to increase tree canopy to help reduce heat by providing shade, evaporation as well as trees provide habitat and many other benefits. To request a new street tree, use this form: [Grand Junction Forestry tree request form](#) or for pruning: [Grand Junction Forestry tree work request form](#)
  - iv. This video from the International Society of Arborist will help you preserve trees, about 23 minutes long: [Removing Turf with Minimal Impact to Existing Trees](#)
- d. Landscape Themes:

- i. Pollinators have been on the decline due to expansion of development. Create a garden that is a good habitat for insects and birds. Pollinators benefit from multiple sources of nectar and pollen so provide a mix of plants that bloom throughout the season. Some pollinators also need bare soil, so leave a few areas that they can use. Having a source of water and shelter away from wind can assist in creating great habitats. Some native pollinators are attracted to specific native plants. Pollinator Resources:
    - 1. [Native plants for pollinators and beneficial insects for the Great Basin](#)
    - 2. [Plant flowering plants and pollinators will come](#)
    - 3. [Encourage Pollinators in your yard and community, blog post.](#)
  - e. Water-wise resource: [Center for water-efficient landscaping](#)
  - f. Sustainable Landscaping: Takes into consideration the entire environment. [CSU Landscape for Life, based on sustainable principles](#)
  - g. Seasonal color- attractive and helps pollinators. [Landscaping for Season Long Color](#)
  - h. Design Resources can be used to obtain ideas. Borrowing ideas and making them fit your situation is perfectly acceptable.
  - i. Landscape Design: [A CSU Website list of Landscape Design Resources](#).  
For ideas for plant design specific to our area:
    - i. [Utah State University Water-wise Landscape Design Series](#)
    - j. [Free Landscape Designs | Waterwise Garden Plans & Xeriscapes \(plantselect.org\)](#) Plant Select is a collaboration between Colorado State university, Denver Botanic Gardens and Green Industry Horticulturists to seek out and distribute plants that do well in our intermountain region. Here are some other design resources:
      - i. Denver Water Xeriscape Plans [Xeriscape plans from Denver Water](#)
      - ii. [High Country Gardens pre-planned gardens](#)
      - iii. [waterwise yards website](#)
      - iv. [CSU Extension general landscape and garden resources](#) – Use this general website to search for more information on many different topics.
- Don't forget to visit local garden centers / plant nurseries to look at plants. Some of them have their own demonstration gardens.
- Schedule a consultation with the Water Conservation Specialist.

- Hire a local landscape designer that is familiar with water wise design for a consultation or hire to do the design. The City of Grand Junction does not support any specific landscaping designer or company over another. Start by checking with family, friends, and neighbors. Always ask for references, proof of insurance, certifications, and memberships to professional associations. Many will provide addresses of jobs they have completed. Of course, doing your own design is allowed.
- Attend a class through the city or one of our partners. CSU Extension does have an online Water Wise Landscape Design class, AGBB 270 online course. [Water wise landscape design handout](#)

4. **Remove the lawn.** before any digging occurs, call 811! Know what's below, be safe and call 811 for locates, it's free and can save your life and prevent utility line damage. Call 811 or go online [colorado811.org](http://colorado811.org) Lawn removal requires some thought prior to ripping it out.

- Removal methods when trees are present: Be aware this process can harm trees by removal of roots or from compaction.** It is of utmost concern to maintain tree health as much as possible. Tree root systems are in the top 12-18" of the soil. The roots reach out, typically in all directions, if possible, a minimum of twice the height of the tree. For example, a 20' tall tree has a root system that is 20' wide per side equaling a 40' diameter. [USU: Transitioning trees from traditional to low water landscapes](#) The tree roots are used to receive water from the lawn. Determine how the tree root system is to be watered going forward prior to removing the other sprinklers. A network of drip emitters or a system with inline drip can be a good option. Modifying the old sprinkler system to rotator heads which are the most efficient nozzles is another option. Slowly reduce watering frequency, while making sure to maintain a slightly moist soil for the tree's root system. The HIZ zone should not affect roots since there is typically a small roof overhang, so it should be dry right against the house.
- Recommended methods of removing turf: Colorado State University Extension has put together a webpage on this topic: [Lawn Conversion Resources](#)
- The method that is the least disruptive to the tree root system is to spray the turf area with glyphosate. Make sure the tree does not have sucking roots or is prone to being damaged easily prior to spraying the glyphosate. This should be a one application and done method. Do **not** use products that also contain broadleaf killer or labelled as Ground Clear, as these can be soil active and can kill trees and shrubs and may prevent other plants



for growing for a long time. Always follow the label instructions, it's the law and it will protect your trees and other remaining plants.

- d. An alternative method would be to rent a sod cutter and use it on its shallowest setting. The sod can be flipped over and allowed to dry to kill the grass, or it can be hauled to the landfill. Hand remove sod around the base of trees. See disposal of sod for details.
- e. Some people use newspaper or paper called Kraft paper, which is purchased by the roll, covered by 4" of mulch to kill off the lawn. Be cautious about using this method as the entire area needs to be watered to assist with the breakdown of the paper, otherwise it creates a barrier for air and water to get through to the soil and plant roots. Since our soil is alkaline, not acidic, and our climate is so dry, these layers can take a long time to break down without watering to keep the layer moist. So, watering the entire area is required to break down the paper. Never use plastic since no water and air can penetrate it thus can kill any existing roots beneath. Solarizing is the process of using clear plastic to heat the soil and kill weed seeds and is a good method for vegetable beds, isolated areas, and areas with no root system underneath the ground. Please do not use heavy equipment to remove turf if there is a tree nearby, this will hurt tree roots and can strip away valuable topsoil that takes a long time to build in our arid climate. Consider all these factors prior to removing turf.
- f. Sod Disposal: Mesa County Compost Facility and the city compost facility will not take sod due to rocks and soil. However, a load of just sod (no trash) including soil and rocks, can be taken to the dump and the disposal fees are waived by the county. Please tell the Mesa County landfill attendant at the scale house that your load is just sod; the spotter will confirm that the load is clean, and the disposal charge will be waived. If there is trash mixed in the load, there will be charged for the disposal of the entire load. Or the sod can be composted in your home backyard compost pile.
- g. [Composting At Home by EPA.](#)
- h. [Composting by Utah State University](#)

5. **Amend the soil:** Once the plan is approved, the soil test recommendations are available, and the turf is removed; it is time to amend the soil if needed.

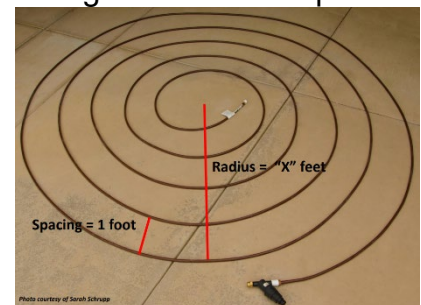
- a. Compost can be tilled at a depth of 6-8" or mixed into the backfill of planting holes. Amendment is the application of organic matter such as



compost being applied to the soil. Most native plants and drier loving plants do not need a lot of organic matter, so organic matter may not be required. Avoid most manure as it can be high in salt. Colorado State University Extension recommends 5% organic matter in the soil. [CSU Plant Talk Soil amendment recommendations](#) Otherwise add a small amount of compost mixed into the soil that will fill the planting holes. See the planting section for more details.

6. **Install Irrigation: Reminder, BEFORE any digging occurs, call 811!** We highly suggest some type of irrigation, and this should be mentioned in your application. Any irrigation system can be made more efficient.
  - a. Figure out what works best for the property and your goals. Drip is a very efficient method of watering and since most properties within our water service area only have domestic water (no raw irrigation water available) the water is clean and does not need filtration.
  - b. Make sure you have a backflow preventer on the system to prevent water from being sucked back into the system. If you can use [WaterSense](#) irrigation projects, like moisture sensors, rain sensors and approved parts, even more water can be saved.
  - c. [WaterSense Labeled Irrigation Controllers](#) Check to see if rebates are available. If trees are in the yard and irrigation mainline needs installed, run the line toward the tree instead of perpendicular where you are cutting more roots. Great method of watering trees and large shrubs is to spiral inline irrigation, recommend 18" emitter spacing for our clay soils, starting 2' away from the trunk, spiraling out past the drip line, which is the tips of the branches.

There are several irrigation supply companies in the area that can provide guidance on the dripline. *Tree Ring Drip Irrigation Image*



7. **Purchase and Install Plants: Proper planting of plants and trees: Reminder, before you dig, call 811 for locates!** Start with healthy plants that are not pot bound, meaning roots are too large or overfilling for the pot and entangled. It is now recommended to physically remove girdling (circling or entangled) roots prior to planting to ensure a healthy plant in the future. Planting is extremely important in the successful growth of plants.
  - a. [How to plant a tree by Utah State Univ. Extension.](#)

- b. [Step by step guide to planting container trees by CSFS](#) Use this same technique for shrubs and perennials.
- 8. Spread Mulch:** Using a 3-4" deep layer of mulch can prevent grass and weeds from growing by shading the soil. [Mulch information, PlantTalk CSU](#)
- a. Leaving some bare soil in spots in the garden will be beneficial to pollinators. Do not put mulch over the root balls of plants and keep a minimum of 1' from tree trunks to prevent adventitious roots from growing and allowing good air circulation. Wood chips that have soil contact will slowly break down and improve the soil. The city has wood chips available at first come, first serve, load your own located on north end of W White Avenue.
- 9. Water Efficiently:** This should be a main goal. Proper watering depends on whether the plant is newly installed or established, soil type, sun exposure, day length and temperature.
- a. Use of a screwdriver, moisture meter or soil probe can help determine if water is needed. Overwatering can be just as detrimental as underwatering.
  - b. Always ignore the top 1-2" of the soil and check deeper for soil moisture. If a long skinny screwdriver goes into the soil easily and is moist to the touch, then watering can be skipped for the day.
  - c. The most frequent watering will need to be applied in the first two weeks after planting. Then decrease frequency and make sure the water is soaking deep enough. Established plants need less frequent but deeper watering.
  - d. How to check soil moisture by [Monitoring irrigation with soil probes](#).
  - e. Proper watering of the new landscape is included in [Water wise tips for Colorado landscapes](#)
  - f. [Efficient use of water in the garden and landscape](#).
  - g. Associated Landscape Contractors of Colorado has a sustainable landscape certificate and information. [Save water, Love your landscape](#)
- 10. Maintenance:** Landscapes that receive this rebate need to be maintained per design for 5 years to the best ability.
- a. Basic garden maintenance includes weed control, removal of dead and diseased plants, replacement of dead plants to maintain 50% coverage, flower head removal as needed, pruning for structure (shrubs and trees) as needed.

- b. At a minimum, plants need appropriate water and weeds need to be controlled according to the weed ordinance. Ornamental grasses should be pruned back in February. Trees in the street lawn must be watered and fertilized.
- c. Contact the city forestry department if a street tree is not well or needs pruning. [City of GJ Tree Work Request](#)
- d. The city will be monitoring outdoor water usage to report to the grant funder, Colorado Water Conservation Board.

### **How to apply for to the Waterwise Lawn Program**

1. Apply for the turf conversion program online [City of Grand Junction Waterwise Lawn Program](#) Items needed for the application includes:
  - a. The square footage of living turf being removed.
  - b. A proposed plant list for installation.
  - c. Proposed materials in the Home Ignition Zone and in the rest of the landscape renovation if lawn is up to a structure in the waterwise lawn proposed area.
  - d. List existing and proposed irrigation system components including controllers, type of irrigation, and back flow preventer.
  - e. Draw the property or part of the property when the turf conversion occurs. Include property lines, existing trees and other plants, dimensions, new plant locations and the Home Ignition Zone. If possible, draw the design to scale. Use graph paper, an aerial map or other method to generate the map. Draw plants to mature size.

Check for other rebates for smart irrigation that could benefit your project. Check out our website for more information. [Water-Efficiency-Rebates City of Grand Junction Webpage](#) Combine this with the Smart Watering Assessment Program, which creates a water budget based on your irrigation system and can help estimate water savings. [City of GJ Smart Watering Assessment Program](#)

And Garden in a Box as a source of designs and low water plants. [City of Grand Junction Garden-In-a-Box Program](#)

Any questions on this process, please contact the City of Grand Junction Water Conservation Specialist, [susan.carter@gjcity.org](mailto:susan.carter@gjcity.org) or 970-256-4187. Happy planning and landscaping. Thanks for conserving water.