



**BENT TREE PROPERTY OWNERS' ASSOCIATION, INC.**  
P.O. Box 2631  
Monument, CO 80132  
www.btpoa.org

17 May 2007

This Newsletter is brought to you by the Water Augmentation and the Beautification Committees. We thank John Stahl for putting this together and Jerry Lopez for his assistance.

There will be a “Water” meeting at the Woodmoor “Barn” (1691 Woodmoor Dr. Monument CO) May 31<sup>st</sup> at 6:30 to 9:00 PM. This is a “town” meeting where all issues and ideas will be explored, information gathered, and a landscape company will present what can be done with what we have. We are asking all residents to attend this very important meeting so that we can be as proactive as possible in managing our water usage in Bent Tree.

Contrary to what you might think, the water we use is not free. All aquifers in the state of Colorado belong to organizations and in our case, they let us borrow it through a water augmentation plan for which Bent Tree pays. Our bill for this year was over \$9,000. We have a restriction of 124,800 gallons of usage per lot. We also have a Water Decree limit of 2000 sq. ft. of irrigated acreage per lot. The BTPOA does not wish to arbitrarily force the homeowner to drastically tear out their landscape to meet this requirement, at least not yet. We are conducting a thorough fact-finding mission, education program and public hearing in order to gather information and make plans that respect each owner and the association.

**Steps currently underway:**

1. Better identify the cause of the large increase in water consumption on metered lots since 2004 (source: BTPOA letter dated March, 19<sup>th</sup>, 2007). This will include a monthly reading of each meter to better understand the consumption and apply the data to a typical usage chart.
2. Identify the size of the homeowner’s landscaped lot by the homeowners and the BTPOA surveyors.
3. Homeowner with lots that exceed the covenant mandating no more than 2,000 sq. of irrigated landscaping per lot will have the option to reduce their landscaping or install external meters.
4. Publish this newsletter to help identify what can be done this growing season.
5. Education and discussion session is scheduled May 31<sup>st</sup>.

**The following suggestions and ideas from the Water Augmentation Committee are for the Bent Tree community to consider:**

1. The Water Committee recommends that based on our applicable covenants, the maximum amount of irrigated landscape per lot is 2,000 sq. ft. If the lot exceeds this and the homeowner wishes to maintain this irrigated area and wait for Bent Tree to make rules and regulations, then it will be the responsibility of the homeowner to install two meters (one for total consumption reading and one for outdoor use including pools and water features), both with outdoor reading capability. This will allow the homeowner to track their consumption, and provide statistical information to the BTPOA to show compliance with the 124,800 gallon limitation defined in our Water Decree.

2. Other considerations to look at to conserve water are:
  - A. Water only when needed and no more than three days per week.
  - B. Implement voluntary restrictions on watering times. For example, limit watering times before 8:30 am and after 8:30 pm.
  - C. Install sensors on automatic sprinklers to stop watering while it rains. These can be installed for about \$30.00.
  - D. Instead of using water to clean, sweep your porch, deck, walkway or driveway.
  - E. Do not water during windy weather.
  - F. Install a hot water recirculating system so that hot water is dispersed more quickly, rather than running water to get hot before you shower or bath.
  - G. Limit the number of times you wash your car, or better yet, use local car wash facilities.
  - H. Only run full loads in your dishwasher and washing machine.
  - I. Evaluate and improve soil before installing lawn or landscape. For example, use 3 to 5 cubic yards of organic material for every 1000 square feet of planting area. Till soil amendment to a minimum depth of 6 inches.
  - J. Don't allow water to pool or flow across the ground or pavement.
  - K. Professional landscaping. You may want to take a self-guided tour of the Xeriscape™ Demonstration Garden at the Conservation and Environmental Center, 2855 Mesa Road, or at the Cottonwood Creek Park Recreation Center, 3920 Dublin Blvd.
  - L. Review the CSU Website at: <http://www.ext.colostate.edu/pubs/consumer/09952.html>.

## TECHNICAL INFORMATION ON SPRINKLER SYSTEMS

Based on a properly installed system running on 50 – 60 PSI of water and the use of a ¾” pipe for irrigation, the following applies:

1. One zone consisting of drip systems consumes about 1 gallon per hour. (Consider reducing the amount of drip time for established plants.)
2. One zone of Pop-ups sprinklers heads consumes about 9 gallons per minute.
3. One zone of rotary sprinkler heads consumes about 5 gallons per minute. (Therefore this type of system requires more time to water properly.)

### EXAMPLE:

#### Watering

#### Sample H2O consumption

#### Sprinkler system

Pressure: 60 PSI via a ¾" pipe

Zones	Description	Production		Minutes	Watering Days/ Season	Totals
1	Drip	1	GPH	25	66	28
2	Pop-up	9	GPM	13	66	7,722
3	Pop-up	9	GPM	8	66	4,752
4	Pop-up	9	GPM	4	44	1,584
5	Rotary Spray	5	GPM	20	66	6,600
6	Rotary Spray	5	GPM	30	66	9,900
7	Rotary Spray	5	GPM	29	66	9,570
8	Rotary Spray	5	GPM	20	66	6,600
9	Rotary Spray	5	GPM	20	66	6,600
10	Rotary Spray	5	GPM	15	66	4,950
						<b>58,306</b>

#### Quick calculation

#### In – House

	Consumption		Flush/ day	Representative	Total /day	Total / yr
Toilets	1.6	GPF	28	40%	44.8	16,352
Balance				60%	112	40,880

**57,232**

**TOTALS 115,538**

## **Seven Principles of Xeriscape**

The Seven Principles of Xeriscape will assure an attractive, healthy landscape with just the right amount of water.

### **1. Plan and design comprehensively**

Have a plan. Find out where things are. Consider the view, slope, exposure and soils of the area. Take into account the existing vegetation and topography of the site and intended use. Decide where things will be. Decide when things will be done. Most landscapes are best done in phases.

### **2. Evaluate soil and improve if necessary**

Soils can vary within a given site; an analysis based on random sampling can provide information for plant selection and soil amendments. The soils in Colorado Springs range from clay to sand, and both are low in organic material. Whether clay or sand, the soil in your landscape will benefit from the addition of sphagnum peat moss, compost, aged manure or other decomposed organic materials. This will improve root development, water penetration and retention. Improve the soil before planting and installing the irrigation system.

### **3. Create practical turf areas**

The type and location of turf areas should be considered a major design element of the landscape. The selection and location of turf should be decided on the same basis as other plantings, such as your purpose and function of the landscape. The reduction or elimination of high-water-use turf areas, and locating them separately so that they may be watered more efficiently, can result in significant reductions in water use.

### **4. Use appropriate plants**

Most plants have a place in Xeriscape - even those that have high water needs. Plant selection should be based on the intended use in the landscape. Use of more plants with low water needs and native plants will allow the maximum water conservation.

### **5. Water efficiently**

If an irrigation system is to be installed, it should be well planned and well managed. Turf areas should be watered separately. Group plants with like water needs, and water each group on separate zones. Not all plants need the same amount of water. Irrigation needs change with the season and the weather. Irrigate according to the needs of the plants rather than watering on a fixed schedule. Even plants used in Xeriscape will require supplemental irrigation until they become established (two or three years).

### **6. Use organic mulch**

Mulch minimizes evaporation, reduces weed growth, slows erosion and helps prevent soil temperature fluctuations. Organic mulch such as wood chips or bark is best, and although this mulch will decompose slowly over time, it will improve the soil by adding nutrients. The use of plastic is not recommended because it will cause organic mulch to slide and prevent air and water from filtering into the soil. Runoff will be increased. Inorganic mulch, such as rock, should be used sparingly. Surrounding a home with rock will increase the temperatures, making the environment too warm for plants and people.

## 7. Maintain appropriately

Proper pruning, weeding and fertilization, plus attention to the irrigation system, will preserve and enhance the quality of Xeriscape. A landscape adapted to the environment will require less maintenance, less fertilizer and reduce the use of pesticides and other chemicals.

### Right, From the Start

#### *Create an efficient irrigation system.*

Creating an efficient irrigation system requires specialized knowledge and understanding of irrigation design principles and local environmental conditions - something most weekend gardeners don't have. Complying with local installation codes is another consideration. Similarly, the best irrigation design won't perform well if the installation is done incorrectly or if inferior components are used. Something as simple as selecting the correct type of pipe can mean the difference between a system that lasts and one that suffers from ongoing repair problems.



Irrigation systems also need regular maintenance to keep them working efficiently year after year. Damage from lawn equipment or from improper winterization can cause leaks and failures. The best bet is to hire an IA Certified Irrigation Designer or Contractor to design and install the new system for you. To make finding a qualified contractor easier, the IA maintains a registry of trained, certified irrigation professionals. Always be sure to check the credentials of a prospective contractor and don't be afraid to ask questions. Hiring a well-trained contractor and insisting on high-quality components is the best start to ensure your system will operate at peak efficiency.

### Design It Right

An efficient irrigation system is one that works properly all the time. Invest in a good designer or contractor at the start, one who takes into consideration the unique water requirements of your landscape and local weather conditions.

- **Plan your irrigation zones carefully.** Be sure that your system will have enough capacity to handle all the plant types you will be watering. The more irrigation zones you plan for, the more tailored the watering schedule can be.
- **Use the best components you can afford.** This will pay dividends in the end.
- **Check the water pressure.** Low or high water pressure can seriously affect sprinkler performance. Sprinklers should be selected to match the on-site pressure.

### Contract It Right

A vital step in creating a high quality, efficient irrigation system is choosing the right irrigation contractor. Make sure the contractor is certified and, if required, licensed to install irrigation systems in your area. Check references.

- **Is the contractor properly insured?** Ask to review a copy of their policy.
- **Visit the IA at [www.irrigation.org/](http://www.irrigation.org/).** Review the [Tips for Hiring a Contractor](#) and the names of [Certified Irrigation Contractors](#) in your area.
- **Obtain several bids.** Understand the differences between them. The lowest bid may not be the best deal.

### **Install It Right**

When installing a new system, use components that will provide the greatest flexibility in watering your landscape. Different types of plants have different watering needs that may change over time. Your system should allow you to apply the right amount of water for each type of plant by the most effective method.

- **Always install excess irrigation zone capacity.** Irrigation zones are areas of the yard that are watered by the same irrigation valve and plumbing. Installing extra connections now makes it easier and less expensive to expand your irrigation system later.
- **Install the required backflow prevention device.** A backflow prevention device is required by the National Plumbing Code for all irrigation systems. It keeps irrigation system water out of the main water supply, preventing contamination. Your contractor will know which type is specified for your area.
- **Install lines at the correct depth.** Irrigation lines should be installed at a depth where aeration and other lawn maintenance will not interfere with them.

### **Landscape It Right**

A well-designed landscape and a well-designed irrigation system need to work well together to maximize savings.

- **Use turf or plant species appropriate to the climate** whenever possible.
- **Practice "hydro-zoning"** by grouping plants with similar water needs close together.
- **Confine non-turf plants to plant beds** to make it easier to water lawn areas.

### **Schedule It Right**

Modern irrigation controllers allow the user to easily adjust their watering schedules to suit all sorts of landscape watering needs.

- **Schedule each individual zone** in your irrigation system to account for sun, shade and wind exposure.
- **Consider the soil type in each zone**, as it affects the how quickly water can be applied and infiltrate without runoff.
- **Adjust your watering schedules** at least seasonally to account for changing water needs. Monthly or weekly adjustments will save substantially more water and improve plant health.

### **Water It Right**

Watering at the right time of day, when the sun is low, the winds are calm and temperatures are cool will save a lot of water - as much as 30% - by reducing evaporative losses. The best time to water is late afternoon, evening and just before sunrise.

- **Saturate the root zones.** Roots are generally within the top six inches of soil. Then let the soil dry. Watering too frequently results in shallow roots, weed growth, disease and fungus.
- **Don't water too long.** Water each zone several times for short periods rather than in one long session. For example, rather than watering for 15 minutes, water three times for 5 minutes, allowing time for the water to soak into the ground before watering again. This reduces run-off.
- **Take careful aim.** Be sure your sprinklers are not watering driveways, sidewalks, patios, or buildings. It's all water down the drain.

Finally, consider installing "smart" technology that automatically adjusts your system to apply water based on factors such as evaporation, precipitation, plant water use, or soil moisture. By replacing only the water that is needed, smart systems offer substantial savings - and convenience.

Another option is a rain sensor. This little device senses precipitation and, depending on the amount of rainfall, stops the system from irrigating. When the rain stops the system picks up right where it should. Soil moisture sensors are another innovation that can be added at any time. These long metal probes measure the soil's moisture content at the root zone. Basic sensors turn off the system when water is adequate; "smart" models turn on the system to maintain correct moisture levels.

## Keeping Up Appearances

*A well-maintained irrigation system is an efficient irrigation system.*

Whether you have a small urban yard using a simple irrigation system, or you are watering acres using the latest irrigation technology, proper maintenance is a must. Without regular maintenance your water stingy irrigation system could turn into a water guzzler. Irrigation systems are exposed to the elements year-round, as well as everything from lawn mower blades to the family dog. That means they need to be inspected and adjusted at least once a year.



The most convenient and effective way to verify your system is to have an IA Certified Landscape Irrigation Auditor inspect it before the growing season begins. This IA certified professional will inspect the entire system and adjust it for peak performance, replacing any damaged components. The auditor can conduct a uniformity test to make sure all areas are getting the proper amount of water and that your sprinklers are placed correctly. You may discover that a few sprinklers need adjustment to achieve proper "head-to-head" coverage in your yard. If needed, the auditor can even create a new watering schedule for an old system to make it more efficient.

Here are a few essential maintenance tips to ensure that your irrigation system is always operating at its best:

- **Learn how to program your irrigation controller.** Adjusting the run times (number of minutes) and the frequency of watering (daily, twice a week, etc.) based on current local weather conditions is the best way to give your plants the water they need. You should also adjust settings for seasonal changes in the plants' water needs and the weather.
- **Inspect the irrigation system for leaks. Leaks are a huge water waster.** A good contractor can perform regular maintenance checks for leaks, broken or clogged spray heads, and other problems. Ask them to show you common problems to watch for between visits.
- **Clean the filter screens if clogged.** All sprinklers from the biggest to the smallest use filters to prevent spray nozzles and emitters from getting clogged and degrading the spray pattern.
- **Adjust sprinkler head height.** Stationary and rotary sprinkler heads need a certain amount of clearance over the plants to operate correctly. Over time plants grow and turf can build up around sprinklers interfering with the spray pattern. Periodically checking the sprinklers for proper clearance is very important. Taller risers may need to be added, or in-ground sprinklers reset so they can distribute water evenly.
- **Adjust spray patterns and positions.** Water that lands on sidewalks, patios, and decks, etc. is water wasted. Sprinklers can get whacked out of adjustment, so having their aim checked yearly is a must.

- **Winterize!** If you live in a climate where freezing can occur you need to have your system properly winterized in the fall. This is usually best left to an irrigation contractor, who has the equipment to ensure the system is clear of any water that could freeze and crack pipes, valve bodies, and sprinklers. A thorough winterization - and proper spring start up - is cheap insurance.

Finally, check the pressure. Just because the pressure was correct when the system was installed doesn't mean it still is. Pressure that is too low or too high can seriously affect the efficiency of your irrigation system. So, have the pressure checked and adjusted every year.

### **Teaching an Old Irrigation System Some New Tricks**

*Update your irrigation system for greater efficiency.*

Saving water is in every homeowner's best interest. You save money and help conserve the local water supply at the same time. Just because you have an old irrigation system installed in your yard doesn't mean that you can't update it to take advantage of the newest, most efficient technology. Your irrigation contractor can tell you what components are best suited to your system and offer the greatest benefit.



Here is a quick look at a few of the options:

- **Add "smart" technology.** Smart technology basically refers to irrigation devices that can adjust your watering schedule without direct input from you. Climate-based controllers that adjust watering schedules based on weather conditions and plant information can have a profound impact on your water usage. Find out more about smart technology at <http://www.irrigation.org/>.
- **Install a centralized irrigation controller.** Typically used on golf courses, these systems are finding their way into more residential and commercial applications, especially for large lawns where water is expensive. With just a few computer keystrokes or by remote control, the user can reprogram controllers in multiple locations. Plus, watering schedules can be saved and reused with ease.
- **Have a rain sensor installed...low-cost, excellent value!** This device can be added to almost any system and will automatically override the system settings to prevent watering when it rains. They are inexpensive, simple to install, and they save water and money.
- **Add a pressure regulator.** Incorrect water pressure can cause conditions such as "misting." Misting occurs when water is turned to vapor rather than droplets at the sprinkler from too much water pressure. Most of the misted water just gets blown away. While a pressure regulator may not help your neighbor's lawn, having one installed by a qualified contractor could do wonders for yours.
- **Install micro-irrigation.** Some of your old sprinklers may be replaceable with micro or drip irrigation components. Your irrigation professional can tell you if micro irrigation is suitable for any of your existing irrigation zones. The water savings from switching may be substantial. Micro irrigation works well in gardens and around trees and shrubs and minimizes evaporative water loss and runoff.

Other relatively inexpensive upgrades include installing check valves on the sprinkler lines and adding matched precipitation rate nozzles. Check valves installed on slopes prevent water from draining downhill and flooding around the lower sprinklers. Installing matched precipitation rate nozzles can save water by ensuring uniform water application in every zone. These nozzles are engineered to deliver water at the same rate, no matter what the pattern. So a zone that has full-circle patterns mixed with partial-circle patterns will be watered evenly, reducing wasteful over watering.

The following is a paraphrase of an article published in the latest OCN:

Help for Gardeners at Monument Library -- The Colorado Master Gardeners and Cooperative extension, El Paso County will offer a help desk at the Monument Public Library... Wednesdays 2:30 – 8:30 p.m. throughout the growing season.

### **Plan Right and Plant Right To Save Water**

*Plan your landscape carefully to save water and money.*

Conserving water doesn't have to involve a lot of trenching and plumbing. Whether you own an automatic irrigation system or not there are many ways to save water in a landscape. These tips can be implemented as part of your normal landscaping and gardening routine.



- **Aerate your lawn and around trees** at least once a year to ensure good water penetration. Turn and cultivate soil, adding compost, or fertilizer, when planting. This helps the soil hold moisture and produces healthier plants that require less water to remain strong.
- **Mulch well around plants, bushes and trees.** Using 2-4 inches of mulch reduces evaporation, moderates soil temperatures, improves water penetration, and helps to control weeds that compete for water.
- **Landscape to suit your lot.** Evaluate conditions like sun and shade, dry and damp areas, what size plants you want now and at maturity, and how you want to use each section of your yard.
- **Purchase turf or plant species that have low water requirements and are well suited to the environment and the area of the yard** where they will be planted.
- **Hydro-zone your yard.** That means grouping landscape plants with similar moisture needs in the same area. Separate them from turf areas, which have different water requirements.
- **Plant in spring or fall** when less water is needed to establish new plants. Smaller plants also need less water to become established.
- **Create functional turf areas**, for example, in play areas. Avoid using turf where it's difficult to irrigate properly, such as on steep slopes. Good alternatives for hard-to-irrigate areas are ground covers, perimeter plants and mulch.
- **Plant shade trees** to lower the air and soil temperatures. This will reduce soil moisture loss.
- **Maintain your yard** by mowing, weeding, pruning and irrigating as needed. A well-maintained yard requires less water.



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Hello Neighbors,

John Heiser and I went to the NEPCO meeting Saturday and I must admit this was the best meeting they have had that I have attended.

The YMCA provided an update on the build-out, the ingress and egress of traffic, and the request for help in disseminating their newsletter and promotional material. We will either link to their site from our Website or we will put in PDF files on our website and also in our emails to owners on our email list. I would like to hear your suggestions.

Andrew Notbohm from the Pikes Peak Wildfire Prevention Partners [www.ppwpp.org](http://www.ppwpp.org) showed us a film that you can view at <http://fireready.com/aboutus/mission.cfm#DVDVideo>. It was very educational and opened my eyes to what a forest should look like.

The point made was man has negatively affected the natural ecology of the forest, and therefore we need to take steps to manage the forest. Fire is a natural occurrence, and the forest and many animals need it to flourish. We have taken fire out of the equation and therefore the forest is growing uncontrollably and is not healthy. With the use of more water by the undergrowth and more trees, the pines are not able to resist the beetle infestation and are even more attractive to the beetle. And since we have taller trees closer together, they contribute to crown wildfires, which is the worst of the fires. Unlike the needle and crown, the bark of the Ponderosa Pine has a natural fire retardant so reducing the limbs on the trees and getting the underbrush under control will help prevent a great many disasters. Limiting the number of trees per acre will also help assure enough water for the trees to fend off the beetle, and not be so close together so as to accelerate a crown fire.

As usual, when you are alerted to something, you recognize more of what you usually didn't pay attention to. As I was driving down Baptist Road, I couldn't help but notice the difference in forest management when I looked at the Fox Run Park on the south and the unkempt forest on the north side of the road. This may be something you may want to observe to compare which example your lot looks like.

Since we have moved into this beautiful forest, it is our responsibility to maintain a healthy forest on our lot. If your lot doesn't look like the Fox Run Park, maybe you should contact the PPWPP and see what you can do to help the forest, help yourself in fire mitigation and help your neighbor by reducing your fire hazard. No one can control Mother Nature, and the experts tell us it is not IF but WHEN we will have a fire in our forest.

Duane and John