Davis, CA

General Irrigation Recommendations

2022

Photo credit: Kathleen Holder

Davis CALIFORNIA

Tree Davis

HELIX Environmental Planning

DAVEY Resource Group

In California, landscape irrigation is estimated to account for approximately 60% of the annual residential water consumption. As a result, the State adopted the Model Water Efficient Landscape Ordinance (MWELO) in 2010 to aid in reducing water usage through the proper selection of plants, irrigation type, and methods. MWELO also considers factors including the regional climate, soil type, solar orientation and site grading. While this ordinance was intended for use by landscape architects and design professionals, its goal should remain the same for the general public.

Irrigation plays a crucial role in the success of landscaping - particularly trees. Trees are frequently overlooked when planning and installing irrigation because there is a common misconception that their roots will naturally grow towards water. To the contrary, trees do not grow well through dry soil, particularly over extended periods of time. Trees native to the Sacramento region (including Davis) are better adapted to our climate which includes hot, dry summers followed by cool, wet winters. Regionally native trees also thrive in our diverse soils and remain relatively free of serious pest and diseases.

The three most common sources of irrigation water include domestic potable water (from a City, County, or water agency), non-potable water (reclaimed water that is minimally processed for use in the landscape but not potable), and well water. This section will focus on the more common domestic water that is provided to a property from a public distribution system (i.e., standard below grade water pipes). Please note that non-potable/reclaimed water has an extensive list of requirements in terms of how it is used, the type(s) of irrigation equipment (typically noted with purple coloring or tagging), the necessary signage and any required filtration. Residents using reclaimed water should contact their water purveyor a full list of requirements including the necessary approval process.

When irrigating trees, consider the following tips and factors:

- Trees should be watered sufficiently to penetrate the soil to a depth no less than 18”.
- The genus and species of tree, and type of soil (i.e. clay, loam, sand) will determine your watering schedule. Most modern irrigation controllers utilize Eto (evapotranspiration) data to adjust seasonal run-times.
- Properly watering new trees is very important especially during the first year of planting.
    - New trees require more water at their base than established trees.
    - If you have planted a new tree, you should completely soak the root ball and area under the canopy. Make a basin surrounding the trunk by mounding dirt to help direct water down to the root ball.
- Unlike turf, trees should be watered for longer periods of time, but the watering should occur less frequently. Longer soaking means roots will reach deeper into the soil encouraging a more drought-resistant root zone.
- Too much water can kill a tree by preventing tree roots from getting the oxygen they need
- As the tree matures, stop watering directly onto the base of the tree and expand the watering zone out around the tree.

There are also several types/methods of irrigation to consider when watering your trees and landscaping. Traditional spray irrigation is not recommended and highly discouraged as part of the Model Efficient

Landscape Ordinance due to excessive overspray and run-off. There are several more efficient types/methods to consider including the following:

- Drip irrigation or low volume irrigation is an efficient way to water trees both above and/or below ground. In drip irrigation, water flows through flexible pipes or hoses and is applied directly to the root zone. Water pressure is controlled by flow devices called emitters. Since little water is lost due to evaporation into the air or by run-off from the soil, the system uses much less water than traditional spray irrigation. The number of emitters used for each plant and the flow rate for each emitter will depend on the size of the tree.
- Deep water bubblers deliver water below ground directly to the roots of the tree, helping to maintain a strong and healthy root structure. A 12" to 36" perforated mesh tube (which can also be cut to a desired length) allows vital water, air, and nutrients to bypass compacted soil and directly reach tree root systems. An added benefit is that it provides excellent aeration, which helps release trapped gases that may increase plant stress.
- Above grade bubblers work in a similar fashion to deep water bubblers minus the aeration tubes. They are often used with existing trees to avoid damage to an established root zone during installation. Because they are placed above grade, they can be easier to maintain and visually trouble-shoot should problems and/or leaks occur.
- Hand-watering is often the most common method of irrigation in older residential area applications and consists of a simple hose and manual shut-off valve. Water can be directly placed where needed and shut-off to prevent over-watering and run-off.