

# WATER SUPPLY PLANNING FOR VIRGINIA LANDSCAPE IRRIGATION

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## RESEARCH SYNOPSIS

### **Objectives**

1. To create a collaborative process to determine information that should be included in a website containing climate and evapotranspiration (ET) data to be used for landscape irrigation scheduling.
  - a. To collaboratively create a website containing ET information through focus groups and online surveys.
  - b. To assess if the created website is useful and user friendly.
2. To employ three case studies of currently utilized sports fields to assess pre and post ET-based irrigation scheduling water consumption and effects on turfgrass quality.
  - a. To estimate the quantity in which water consumption would be reduced when employing ET-based irrigation scheduling compared to current water use.
  - b. To determine if turfgrass quality is impacted when ET-based irrigation scheduling is employed.
  - c. To investigate rainwater harvesting as an alternative irrigation water source at the three sites.

### **Methods**

#### *Website Building*

A collaborative process with landscape professionals has been initiated to assist in developing a website containing ET information. Turfgrass professionals were polled to determine their Internet usage and likelihood of using the proposed website. This information will influence the information to be included in the website. Several website prototypes will be compiled for focus groups representing the turfgrass industry, master gardeners and/or extension personnel. Each focus group will interact with the various prototypes and determine which aspects they prefer. The goal of using focus groups is to ensure a useful and user friendly website, that represents a wide landscape irrigation population, is produced and to encourage technology adoption.

#### *Case Studies*

Case studies will be conducted on a soccer game field at George Mason University in Fairfax, a golf course rough at Williamsburg Country Club, and research plots at the VT Turfgrass Research Center. These sites will cooperate to compare normal irrigation, which is typically based on observation and experience, and ET-based irrigation. Each site will irrigate two separate areas based on normal and ET-based irrigation. Water consumption and weekly turfgrass quality ratings will be recorded.

An analysis at the three sites will also investigate the feasibility of harvesting rooftop rainwater. Rooftop rainwater can be diverted to an onsite retention pond or storage tanks for an inexpensive water source. Site assessments will determine the amount of water that could be harvested to supplement the current water sources. Site assessments will also determine current water sources and how rainwater harvesting will impact the reliance on these water supplies, either through reduced reliance on potable water systems or reduced surface or groundwater withdrawal.

#### *Impact*

This water conservation and planning research would create an easy to use website for landscape professionals that will assist in scheduling irrigation applications. The website creation process and the actual website could also increase awareness of water conservation issues that extend further than irrigation practices. The rainwater harvesting portion of the research would uncover a possible alternative water source for Virginia irrigation needs. Both the conservation through ET-based irrigation scheduling and utilizing rainwater for irrigation studies address the Virginia locality water supply plans to be completed by 2011, as per the 9 VAC 25-780 bill.