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Implementing Water Conservation Education for University Campus Facilities and Grounds Managers

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Abstract: A workshop was held to assist Georgia's public universities to reduce water use. The workshop targeted university campus facilities and grounds managers. University water use ranges from outdoor irrigation of ornamental displays and sports fields, to housing facilities, to complex laboratory systems. Extension specialists worked with the Department of Natural Resources and the University System of Georgia Board of Regents to develop workshop content and identify potential attendees. The workshop emphasized the use of the water audits as a planning tool and case studies.

Introduction

The drought of 2007-2008 underscored the need to create a culture of water conservation in Georgia. Though the state receives average annual precipitation of 51 inches (Southeast Regional Climate Center, 2002), recent population growth has stressed the state's water resources. Georgia's population continues to grow; three counties are on the list of fastest growing counties in the United States (Bernstein, 2008).

In 2003, the Georgia Department of Natural Resources (DNR) sponsored a study of attitudes and perceptions of Georgia citizens to water conservation (Responsive Management, 2003). The study found that Georgia citizens expect state agencies to take a lead in water conservation and they felt discouraged when they perceived water waste in public facilities.

In 2006, the Georgia DNR initiated a program to educate and encourage citizens to conserve water. One component of the program focused on having public universities demonstrate leadership in water conservation. Public universities were targeted because of their pivotal role in education and high visibility.

The University System of Georgia Board of Regents (BOR), eager to provide an example for the state, called on the resources and expertise of UGA Cooperative Extension. Together, the BOR, DNR, and an Extension specialist designed a 2-day workshop tailored to the needs of university campus facilities and grounds managers.

Target Audience

Campus facilities and grounds managers deal with a full range of water use, from outdoor irrigation of ornamental displays and sports fields, to housing facilities, to complex laboratory systems. They are comfortable working with new technologies and understand the constraints of limited budgets.

Rather than explaining the complexities of advance technology, this group needed help in evaluating water use from different parts of their campus and setting priorities. They needed a tool to help them determine where their efforts would have the greatest impact. Managers needed strategies for developing comprehensive water conservation plans to effectively reduce campus-wide water use while maintaining functionality.

Workshop Development

Each of the program planning team members brought critical knowledge to the workshop. The DNR provided the expertise on indoor water use, having experience with industrial, institutional, and commercial water conservation projects. The Extension specialist provided the expertise in outdoor water uses. The BOR provided contact information for facilities managers at University System of Georgia campuses and were able to identify campuses with conservation success.

The first day of the workshop focused on indoor water use, and the second day focused on outdoor water use. Topics covered on the first day were these:

- Overview of the Current Drought and Future Water Plans Indoor
- Water Audits—How To Audit a Building
- Low flow Technologies for Bathroom, Kitchen, and Cooling/Heating Systems
- Case Study—Development of a Water Conservation Plan and Identification of Water Saving Projects
- Case Study—Roll of Campus Community in Successful Water Use Reduction
- Case Study — Successful Water Use Reduction at a Small Institution

For Day 2 and outdoor watering, the following presentations were given:

- Overview of the Role of Soil in Water Use

- Outdoor Water Auditing—How to Conduct Audits for Elaborate Landscape Systems
- Best Management Practices for Landscape Water Conservation
- New Technologies for Irrigation Equipment and Management
- Reuse/Reclaimed Water Use
- Plant Selection Minimum Water Use
- Drought Tolerant and Salinity Tolerant Grass Cultivars
- Case Study—Successful Projects That Reduce Outdoor Water Needs

Two components of the workshop were identified by participants as particularly helpful: the use of water auditing in preparing a water conservation plan and case studies presented by other managers.

The use of indoor and outdoor water auditing as a tool for developing water conservation plans was highlighted on both days of the workshop. The training focused on the water audit as a means for identifying and quantifying water use, water waste, and water losses. This information would then be the basis for determining how to achieve the greatest water savings for the lowest cost. The water audit provides the information baseline for creating an effective plan.

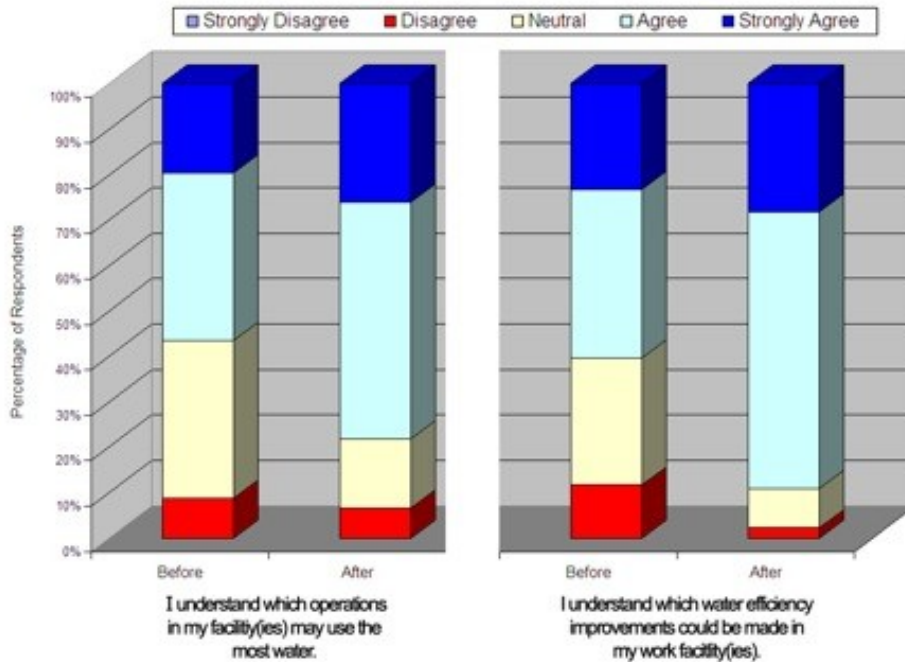
Case studies highlighted successful and unsuccessful efforts at three universities. These case studies illustrated how expected/perceived water conservation problems did not necessarily yield expected savings. In each case, a water audit separated real from perceived water conservation issues.

The case studies indicated that heating and cooling of buildings used the most water. The audits also encouraged cooperation and communication with water authorities as attempts were made to locate meters and wrestle with estimated bills. The case studies emphasized the importance of communicating and educating the campus community, so that they could participate in water conservation by voluntarily lowering their consumption. At a round table session open to all participants, successes and failures were freely discussed because facilities managers do not perceive themselves as competitors.

Results

A total of 66 managers representing 30 institutions of higher education participated in the workshop, and 46 (70%) filled out a post-workshop evaluation. Eighty-five percent of the participants found the workshop informative. The participants indicated on the evaluations that the workshop increased their understanding of which operations might use the most water and which improvements could be made in their facilities (Figure 1). Participants also reported they found the water audit procedure information, case studies, and discussions most valuable.

Figure 1.
Response To Post Workshop Evaluation Questions



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