

Executive Order 13423 Technical Guidance - Outdoor Water Conservation

General Principles and Commitments

Use water efficient landscape and irrigation strategies, including water reuse and recycling, to reduce outdoor potable water consumption by a minimum of 50 percent over that consumed by conventional means (plant species and plant densities).

Technical Guidance

Introduction

The Federal Government uses an estimated 244-256 billion gallons of water annually. This water is consumed as potable water, to cool or heat buildings, to support processes occurring within the buildings, and to maintain healthy landscaping. There are many options available for water efficiency in Federal facilities, ranging from simple strategies such as installing low-flow faucets, to sophisticated solutions such as using a computer- and climate- controlled irrigation system. In an era of ever-tightening budgets, it is important for facilities to be aware of all the options available to them to save money while maintaining or expanding mission-critical activities.

Why is water efficiency important to federal facilities?

1. Water resources are becoming increasingly scarce. As the U.S. population increases, so does our water use. Many regions are starting to feel the strain, as indicated by data on the overuse of groundwater and the intrusion of saltwater into many areas.
2. Legislation mandates conservation. Both [Executive Order 13423](#) and the Energy Policy Act of 1992 call for Federal agencies to install all cost-effective energy and water conservation measures in their facilities.
3. Costs for water and sewer services are increasing steadily. Unlike electric rates, water rates are projected to increase in the future. A conservative estimate of future increases in water rates for Federal agencies is about 10% per year nationwide.
4. Federal facilities can play an important role in preserving local water resources. They are often a major user of water in their communities, and can Lead By Example in demonstrating good water management practices. This is especially true for facilities that have their own water supply.

For all these reasons, Federal agencies should be determining the most cost-effective ways to save water, energy, and money in their facilities by implementing efficiency measures.

Outdoor water is described in this guidance as water intended for systems occurring outside of, or separate, from a building. Outdoor water systems include irrigation systems. This guidance addresses water-efficient choices in planting and irrigation design to encourage use of well-adapted plants; completing soil analysis to become better informed about which strategies are most appropriate for the site; planting only practical turf areas; using mulches to reduce irrigation requirements; understanding appropriate maintenance practices; and designing and operating efficient irrigation strategies. It is highly recommended that all federal facilities use indigenous and low-maintenance plants that are tolerant of the site's existing soils and climate without supplemental irrigation or fertilization once established. Native plants typically will perform better than imported species and require less maintenance.

Implementing water efficiency and conservation measures reduces the strain placed on the source of that water, whether it be a municipal water source, from a well, or reclaimed water. These measures also decrease the energy implications of treating water to make it suitable for potable water.

WATERGY is a spreadsheet model that is often used to analyze the potential of water savings and associated energy savings. The spreadsheet allows input of utility data (energy and water cost and consumption data for the most recent twelve months) and facility data (number and kind of water consuming/moving devices and their water consumption and/or flow rates). It then estimates direct water, direct energy, and indirect energy annual savings, as well as total cost and payback times for a number of conservation methods.

Clarification

The irrigation performance baseline should be based on plant supplemental water needs. The Irrigation Association's "Turf and Landscape Irrigation Best Management Practices" provides guidance on this topic.

Major Resources

WBDG

DESIGN OBJECTIVES

Water Conservation

Model Contract and Specification Language

- 32 90 00 (02900) - Planting
- 33 16 20 (11201) - Rainwater Harvesting

Other

- [American Society of Landscape Architects \(ASLA\)](#)—outlines sustainable approaches to landscaping in the ASLA Code of Environmental Ethics and ASLA Public Policies.
- [EPA GreenScapes: Environmentally Beneficial Landscaping](#)
- [LEED™ for New Construction](#)
- [Watergy software](#)

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