

Huntington Veterans Affairs Medical Center—Faucet and Showerhead Replacement Project

Best Management Practice Case Study #7: Faucets and Showerheads

The Huntington Veterans Affairs (VA) Medical Center implemented an award winning faucet and showerhead water efficiency program in 2007. The efficiency improvements save the medical center more than 1.5 million gallons of water each year.

The Huntington VA Medical Center is a fully-accredited, 80-bed acute medical and surgical care facility located in West Virginia. The medical center serves veterans in western West Virginia, southern Ohio, and eastern Kentucky. It offers primary and specialized outpatient services while also functioning as the main teaching facility for the Marshall University School of Medicine. With approximately 1,000 professional, technical, and support personnel, Huntington VA Medical Center provided health care to 293,000 outpatients and 4,200 inpatients in 2008 alone. The facility is situated on 101 acres with 24 buildings covering 635,000 square feet. The medical center is one of seven anchor hospitals in the VA Mid-South Healthcare Network, which is headquartered in Nashville, Tennessee.

Project Summary

The Huntington VA Medical Center implemented a large retrofit of faucets and showerheads in its 1-South section, which contains offices, clinics, a surgery unit, patient rooms, and laboratories. Conducted in 2007, the retrofit was part of the medical center's Green Environmental Management Service (GEMS) initiative.

New 1.5 gallon per minute (gpm) laminar flow faucets replaced 178 outdated 2.5 gpm models. A laminar flow head delivers tiny side-by-side streams of water, that provide a continuous



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Photo credit: PIX16720

Low-flow showerhead retrofits save water and prevent bacteria through a microbial head.

flow while maintaining a low flow rate. Laminar faucets tend to have less splashing and lend a smooth feel to the water.

The GEMS initiative also converted 33 showerheads from 2.2 gpm to 1.75 gpm models with flow restrictor style heads. The retrofit utilized the existing pressure and temperature compensating valves in the shower stalls. The efficient retrofits perform well while providing an adequate flow rate for both patients and staff.

As an added benefit, the Huntington VA Medical Center incorporated silver ion antimicrobial technology to faucets and showerheads. Because air easily enters heads, bacteria can grow inside faucets and showerheads. The combination of air and water is a perfect medium for bacterial growth, which could endanger patients at the hospital. Silver ion interrupts this process by killing the bacterial cell wall, stopping the bacteria from entering the water stream.

Huntington VA Medical Center used in-house staff to perform the retrofits. Each new fixture took approximately 30 minutes to replace. The medical center scheduled retrofits over a period of time, making it possible for in-house staff to perform regular duties while also implementing the efficiency retrofits.

The Huntington VA Medical Center also implemented additional fixture efficiency retrofits, including converting 87 toilets to both 1.6 gallon per flush (gpf) and dual flush toilets. Dual flush toilets have a full and partial flush option with average water use of approximately 1.3 gpf.

Huntington VA medical Center saves 1,538,000 gallons of water each year due to faucet and showerhead retrofits. Costing less than \$3,500, project payback was less than two months.



Photo credit: PIX16679

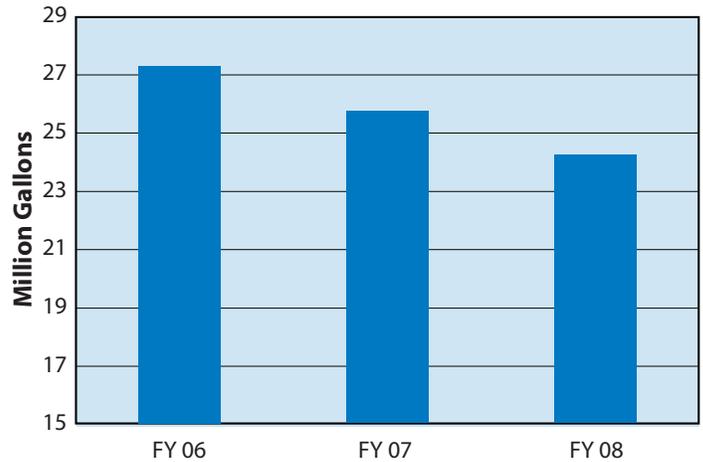
Laminar flow faucet in Huntington VA Medical Center

Cost and Savings Summary

Retrofitting faucets and showerheads save the Huntington VA Medical Center 1,538,000 gallons of water each year. This data is based on actual pre- and post-retrofit metered data and was derived based on average patient and staff occupancy rates over the year.

Huntington VA Medical Center enjoys an annual cost savings of \$12,900 based on combined water and sewer costs of \$10 per thousand gallons. In addition, using less hot water saves energy resulting in an annual energy savings of 5,800 therms per year creating an additional \$7,200 in annual cost savings. The center spent \$771 for total material costs and \$2,637 for in-house labor to install the features. As a result of combined water and energy savings, the Huntington VA Medical Center achieved a project payback in less than two months.

Since completing the plumbing fixture retrofits in 2008, Huntington staff evaluated water use and found that consumption decreased 11 percent from fiscal year 2006 compared to 2008. This reduction includes faucet and showerhead retrofits described in this case study as well as other conservation efforts, such as a toilet retrofit done during the same time period. The bar chart above right shows actual water use at the medical center in fiscal year 2006 through 2008, revealing more than three million gallons of annual water savings.



Huntington VA Medical Center Annual Water Use

Because of this project's incredible success, the Huntington VA Medical Center received the Federal Energy Management Award for Water Management in 2008. Project success is credited to a dedicated in-house plumbing team that includes Scott Webb, Maintenance and Operation Supervisor, and Paul Myers, GEMS Coordinator.



Photo credit: PIX16681

John Stenger, Director of Healthcare Engineering for the Veterans Healthcare Administration, congratulates Scott Webb on receiving the 2008 Federal Energy Management Award for Water Management. FEMP acknowledges Scott Webb and Paul Myers, GEMS Coordinator, for supporting this program and the resulting case study.