



## SHOWCASE PROJECT: DEPT. OF VETERANS AFFAIRS: ERIE MEDICAL CENTER

### SOLUTION OVERVIEW

The U.S. Department of Veterans Affairs (VA) runs programs benefiting veterans and their families, including health care services such as community living centers, clinics, and medical centers. The VA implemented water savings measures in the Nutrition and Food Services area (a kitchen for veteran patients) at the main hospital of the Erie VA Medical Center (VAMC) in Erie, Pennsylvania. Constructed in 1950 by the Army Corps of Engineers, the Erie VAMC main hospital is a 7-story, 282,000-square-foot facility.

Executive Order 13514- Federal Leadership in Environmental, Energy, and Economic Performance directed federal facilities:

*“...to reduce potable water consumption intensity by 2 percent annually through fiscal year 2020, or 26 percent by the end of fiscal year 2020, relative to a baseline of the agency’s water consumption in fiscal year 2007, by implementing water management strategies including water-efficient and low-flow fixtures and efficient cooling towers.”*

In support of these goals, Erie VAMC facility management, Green Environmental Management Systems (GEMS), and energy management personnel teamed up to develop actions to reduce water use at the Erie VAMC.

### SECTOR TYPE

Commercial

### LOCATION

Erie, Pennsylvania

### FINANCIAL OVERVIEW

Project Cost \$60,000

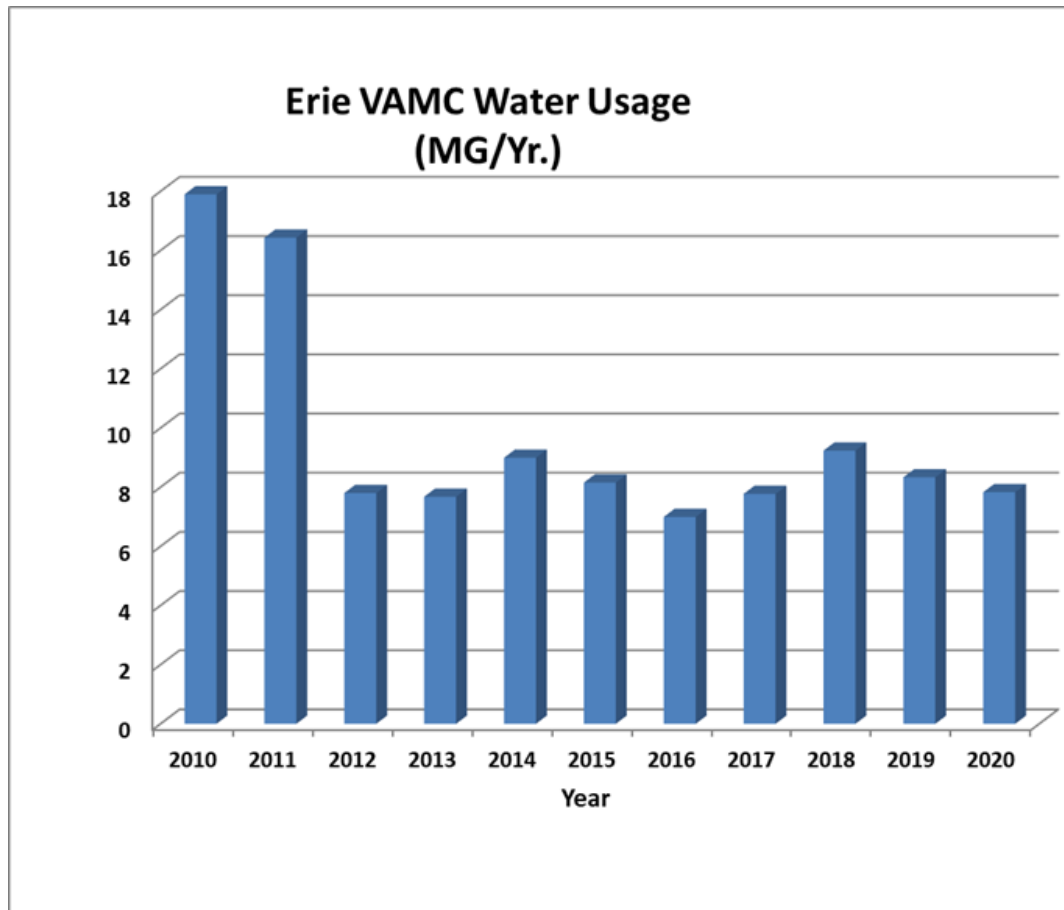
### SOLUTIONS

The team identified three outdated single pass water-cooled condensing units which serviced the walk-in refrigerators and freezers in the kitchen area. They discovered that potable water was being used as cooling water and continuously drained to the sewer after passing through the condensing coil. The condensing units were in operation 24/7, 365 days per year.

A water-cooled condensing unit uses water, rather than air, for refrigerant heat rejection. A single-pass system uses that water only once before sending it down the drain, utilizing a large amount of

water resources. These systems, although wasteful, were often selected because they are inexpensive to install. The savings are short-lived because the systems are significantly more expensive to operate and result in higher water and sewer bills.

By decommissioning and replacing the three old units with modern air-cooled condensing units, the facility achieved a dramatic reduction of more than 55% in monthly water usage. The replacement saved over 8,000,000 gallons over the first year of operation. The cost of the new system was approximately \$60,000.



Water-saving initiatives did not begin or end with this project. The Erie VAMC has utilized innovative water-saving technology to maximize efficiency throughout its growth. This includes the construction of the Behavioral Health building in 2011, the Ambulatory Surgery addition to the main facility, and the Community Living Center. In 2020, the Erie VAMC replaced the commercial-grade kitchen dishwasher with a new ENERGY STAR®-rated unit. The Erie VAMC continues to replace outdated hardware with low-flow water-saving fixtures and has incorporated new automatic-flushing faucets in low-usage areas to reduce the amount of water wasted for Legionella flushing\*.

## OTHER BENEFITS

In addition to the water savings, the retrofit reduced overall maintenance costs and provided a more consistent operation of the overall system. Variations of water temperature, pressure, and flow with the prior system often caused inconsistent cooling of the refrigerators and freezers.

\*Legionella is a bacteria that causes Legionnaires' disease and occurs in water branches that are not regularly used. The purpose of routine pipe flushing is to prevent stagnating conditions which may result in the tempering of water temperature and establishment of favorable conditions for Legionella growth. Hyperchlorination thoroughly kills Legionella in piping systems; flushing of the system is performed to reduce chlorine levels for safe human consumption.

**Annual Energy Use**

**Annual Energy Cost**

**Energy Savings**

**Cost Savings**



VA Medical Center in Erie, PA