



Putting WaterSense® to Work

Texas Hotel Upgrades to Four-Star Water Efficiency

Sector: Hotels; Focus: Sanitary Fixtures and Equipment

Project Summary

San Antonio, Texas, has seen its hospitality industry grow by 85 percent in the past decade and currently attracts 21 million visitors per year. Recognizing that this growth makes water conservation in hotels a priority, San Antonio Water System (SAWS) created the WaterSaver Hotel program—a comprehensive approach to water and utility cost savings in the city’s hotels that includes rebate incentives and providing high-efficiency fixtures to participating hotels. The Hilton Palacio del Rio Hotel (built in 1968 and the oldest hotel in downtown San Antonio) participated in the program and worked with SAWS to increase water efficiency in its 470-guest room facility.



On average, water use for sanitary fixtures (e.g., toilets, faucets, showerheads) accounts for 30 percent of a hotel’s total water use. Beginning in 2007, the WaterSaver Hotel program paid the overhead costs for the Hilton Palacio to replace its old, inefficient guest room toilets, faucets, and showerheads with new WaterSense labeled or high-efficiency fixtures. For example, SAWS replaced 616 bathroom faucet aerators flowing at 2.2 gallons per minute (gpm) with 1.5 gpm models and replaced 525 toilets with WaterSense labeled models, which were the only WaterSense labeled product types available at the time of these retrofits. WaterSense labeled products, which now include toilets, showerheads, faucets, urinals, weather-based irrigation controllers, and commercial pre-rinse spray valves, are independently certified to use at least 20 percent less water and perform as well as or better than standard models. Table 1 summarizes the fixtures replaced at the Hilton Palacio.

Case Study Highlights



Photo credit: Hilton Palacio del Rio

- **Hotel:** Hilton Palacio del Rio Hotel
- **Location:** San Antonio, Texas
- **Number of guest rooms:** 470
- **Water savings:** Reduced water consumption by 49 percent, saving 26 million gallons or 80 acre-feet of water per year
- **Cost savings:** \$160,000 in water, sewer, and energy costs per year

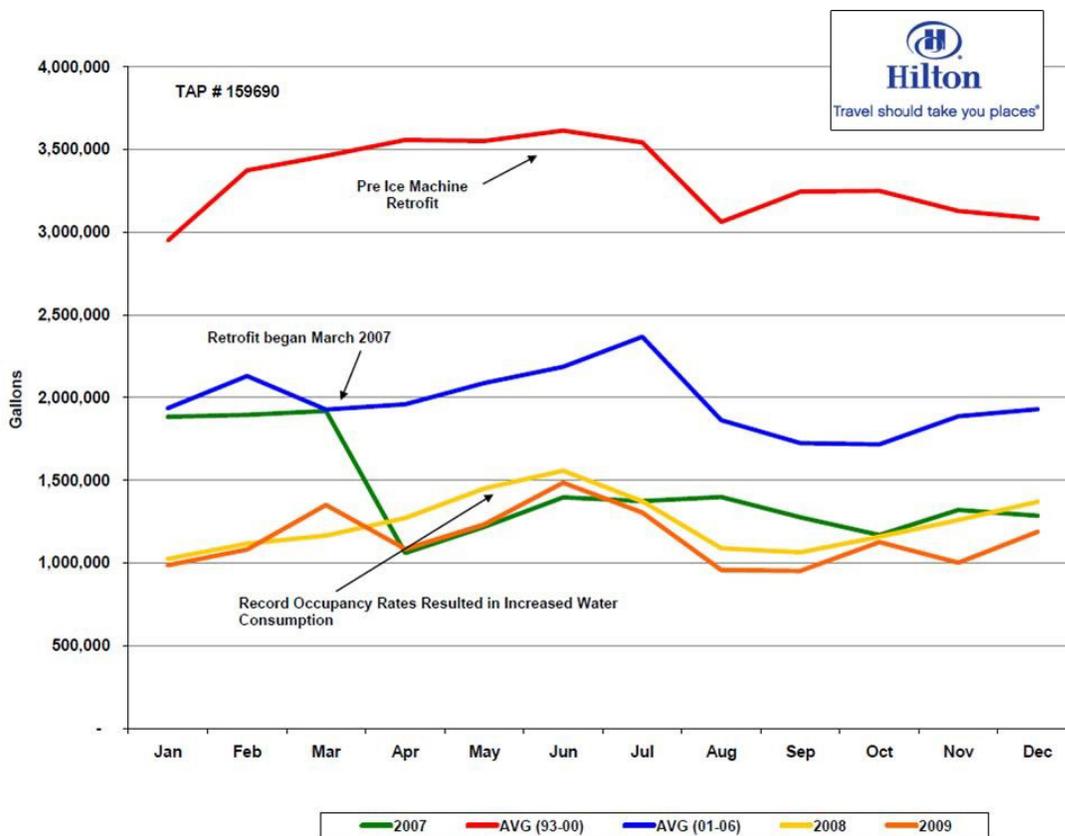
Table 1. Hilton Palacio’s Fixtures and Fittings Retrofits

Fixture/Fitting Replaced	Original Efficiency	Retrofit Efficiency	Number of Units Replaced
Toilets	5.0 gallons per flush (gpf)	Dual flush – 1.28 full/.8half	525
Faucet Aerators	2.2 gpm	1.5 gpm	616
Showerheads	2.5 gpm	1.5 gpm	479
Water-Cooled Ice Machines	Single-pass cooled	Efficient, air cooled	22

In addition, in 2004, the Hilton Palacio completed a project with SAWS in which the hotel eliminated water-cooled ice machines, which can consume as much as six times the water used in air-cooled models. SAWS recognized potential water savings in eliminating this single-pass cooling application—which uses water to remove heat—in the hotel’s ice machines. To encourage the Hilton Palacio to commit to this retrofit, SAWS offered a rebate for replacing the water-cooled ice machines with water-saving, air-cooled models. Although ENERGY STAR® qualified models were not available when Hilton Palacio completed its retrofit, ENERGY STAR qualified ice machines are now recommended for all facilities replacing older equipment.

As a result of these improvements, the Hilton Palacio reduced the total gallons of water per room from 209 to 107 between 2004 and 2011, achieving a total reduction of 49 percent. Together, the upgrades contribute to savings of 26 million gallons of water, \$80,000 in water and sewer costs, 480,000 kilowatt-hours of electricity, and \$80,000 in energy costs per year. Figure 1 illustrates the hotel’s water use over time. SAWS spent \$110,000 on the upgrades, corresponding to a payback period of less than two years, had the hotel paid for the upgrades.

Figure 1. Water Use at Hilton Palacio from 1993 to 2009



Acknowledgements

The U.S. Environmental Protection Agency’s (EPA’s) WaterSense program acknowledges San Antonio Water System Conservation Planner Brandon Leister for providing information for this case study.

Learn More

To learn more about water efficiency in commercial and institutional buildings, visit the WaterSense website at www.epa.gov/watersense/commercial to access *WaterSense at Work* best management practices, tools, case studies, and more.