Commercial & Retail Centers

The larger and more complex the retail center, the more water-uses are employed. They may include those of medical and dental offices, the hospitality industry, food-service outlets, laundries, photo processing, grocery stores, cooling towers and boilers, and maintenance cleaning.

Plumbing

Appropriate technologies include high-efficiency toilets requiring not more than 1.3 gallons per flush and urinals which flush with 1 gallon or less (no automatically timed flushing systems), as well as self-closing faucets with flows of 0.5 gallons per minute (gpm) for hand washing. If available, and where codes and health departments permit, non-potable water may be used for flushing. **REST**

Cooling and Heating Systems

Refer to the **"Office Buildings"** and **"Schools"** summaries for recommendations on evaluating cooling towers *versus* air-cooling, open- *versus* closed-loop systems, and heat and hot-water system practices.

Floor Cleaning

Floor cleaning may use wet methods, but wasteful open hoses are discouraged. Install drains close to areas where liquid discharges are expected. **PROC** Arrange equipment for easy use of a mop and squeegee system or floor-cleaning machine. Install self-closing nozzles, limiting flow to 5 gpm on washdown hoses. **FOOD**
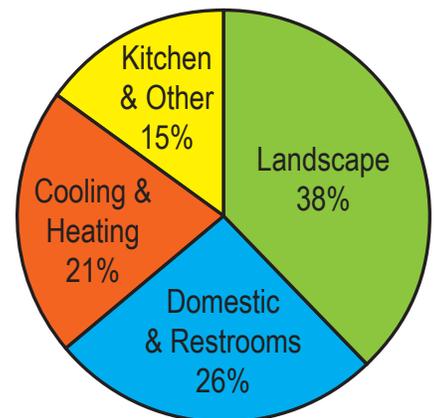
Submetering

Separate metering of individual units (tenants), water-using systems, or building areas is recommended where possible in order to ensure that the costs of water use and, where feasible, wastewater disposal are equitably dispersed and accounted for accurately. Reflecting actual use and costs often offers a reliable incentive for water-use efficiency. **METER**

Special Purposes

For photography and medical and other imaging, employ digital technologies that allow images to be displayed on electronic

Use climate-appropriate landscaping and irrigation systems to reduce water consumption in multi-use centers.

Typical water use
in commercial
and retail centers

video screens and stored on computer files. Where film imaging is required, use self-contained "mini-lab" image-developing units that require no plumbing or washing to develop the film. For paper or film copies of the image, produce images using laser or ink-jet printing technology. *PHOTO*

Other

Other summaries identify additional water-efficiency practices for such centers.

- For water features, therapeutic pools, swimming pools and landscape, refer to **"Water Features, Pools, and Landscapes."**
- For kitchens and food service areas, see "**Restaurants and Fast-Food Outlets"** and **"Bakery/Pastry Shops."**
- For medical and dental offices and laboratories, refer to **"Hospitals"** and **"Laboratories."**
- For laundries, see **"Coin- and Card-Operated Laundries."**
- For take-home food sales, refer to **"Grocers."**
- For vehicle maintenance and sales, refer to **"Auto Service and Repair Shops"** and **"Vehicle Washes."**

TIP: Conspicuously mark fire-protection plumbing so no connections will be made except for fire protection. Additionally, flow-detection meters should be installed on fire services to signal unauthorized water flows. *REST*