

## CASE STUDY:



# K&W CAFETERIAS

Location:	Statesville, N.C. (Iredell County)
Industry:	Food Service (SIC Code 5812)
Pollution Prevention Application:	Water Conservation
Water Reduction:	9,000 gallons per day/75 percent reduction
Annual Savings:	Not Calculation
Contact:	Dave Mullens, (704) 871-0191

## BACKGROUND

K&W Cafeterias has been in operation since the 1940s. Named after its founding owners, the original K&W Restaurant seated 110 people. This first establishment has grown into a corporation with 34 cafeterias in the Carolinas and Virginias that employ more than 2,500 people. Each location serves up to 2,000 cafeteria-style meals each day.

Food service providers use large quantities of water to safely and effectively prepare and serve food. The U.S. EPA estimates that five gallons of water are used to prepare a single meal. Water is used not only inside the establishments but outside as well, to irrigate landscapes and to clean parking lots and other exterior surfaces. With more than 10,000 commercial food service establishments in North Carolina, water is a resource of necessity for this industry.

## WATER CONSERVATION

North Carolina has been in a drought since 1998. In 2002 many of the state's water sources had dropped to either at or below a 100-day supply. Long-term drought conditions still persist and are likely to continue.

Many municipalities have mandatory water use restrictions in place that affect commercial and industrial facilities. In August 2002, the Statesville K&W Cafeteria was required by town officials to reduce its daily water consumption of 12,000 gallons by 40 percent. To meet the new restrictions, the site operators initially surveyed the following water-using activities and devices:

### Water-using Activities

- Habits of customers' water consumption;

- Meat, fruit, vegetable and salad washing and preparation;
- Kettle, utensil and ware washing;
- Kitchen cleaning; and
- Exterior cleaning (parking lots, windows and dumpsters) and landscape irrigation.

### Water-using Devices

- Dining area water dispenser;
- Hoses;
- Handwash sinks;
- Potato peeler;
- Dish and ice machines;
- Pot, prep and multi-compartment sinks;
- Steam table;
- Domestic (bathrooms, toilets and sinks).

## WATER REDUCTION ACTIVITIES

This K&W Cafeteria took a very commonsense approach to reducing daily water consumption. After identifying areas of use, employees were made aware of the newly mandated reductions and how the requirements affected their jobs. With the understanding and support of staff, the cafeteria made the following changes that did not impact customer satisfaction or sanitation.



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## Front of the House

- Customers are offered bottled water to purchase with no complimentary tap water available.
- The water tap in the dining areas is shut off, which saves an estimated 44 gallons per day.
- Minimum amounts of water are added to the steam table to provide the desired heated temperature for keeping food warm. Previously, excess water was used, the overflow discharged, and the unit was cleaned twice per day. Currently, this unit runs on the same water and is cleaned once daily which saves approximately 60 gallons.

## Back of the House

- Frozen foods are no longer thawed under running water but instead are defrosted in the refrigerator. This technique requires more planning and time to ensure specific foods are ready for preparation.
- Fruits and vegetables are delivered pre-cleaned which reduces the amount of initial washing. Vegetables are combined for single cleaning where before they were washed individually. These fresh foods are washed in ponded water and not under running tap water.
- In the past, 16-gallon kettles were filled close to the rim with water and cleaned with that water brought to a boil. Now, water is added only to the level that food reached in the kettle and 1-2 gallons of water are placed in the bottom of the kettle which is then handscrubbed, which saves 16 gallons of water per cleaning.
- Ice machine optic sensors were set to minimum fill levels to provide the lowest possible daily requirement.
- Dish machine operation was drastically reduced by switching from reusable wares to single-serve eating and drinking utensils. Only silverware, cooking utensils and trays are washed in the dish machine. Approximately 2,000 gallons of water are saved daily.

- Floors are now mopped and not hosed using the rinse water from the number three basin of the four compartment (pot) sink that is transferred into a lined 35-gallon trash can.
- Other non-food surfaces (shelves and walls) are washed with water collected from the number four basin of the four compartment (pot) sink. These surfaces were previously cleaned with tap water.
- Dry cleanup and mopping/scrubbing have replaced pressure washing with hoses. Mopping is conducted with water collected from the next to final stage of rinsing from the pot sink.

## General Operations

- All water pipes, toilets and faucets were inspected for leaks and repaired as necessary.
- Aerators were installed on all hand wash and cooking sink faucets.
- Hoses were removed from facility operations.
- All exterior washing (parking lot, dumpster areas, windows) and landscape irrigation were eliminated.

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## WATER REDUCED

The Statesville location has accomplished a water reduction of 9,000 gallons per day - a 75 percent reduction. This tremendous achievement has been the result of employee and management involvement, dedication and efficiency. This K&W Cafeteria is continuing to evaluate its operations to identify areas of improvement while maintaining customer satisfaction.



The North Carolina Division of Pollution Prevention and Environmental Assistance provides free, non-regulatory technical assistance and education on methods to eliminate, reduce, or recycle wastes before they become pollutants or require disposal. Call DPPEA at 919.715.6500 or 800.763.0136 or e-mail [nowaste@p2pays.org](mailto:nowaste@p2pays.org), or visit DPPEA's Web site at [www.p2pays.org](http://www.p2pays.org) for assistance with issues in this Fact Sheet or any of your waste reduction concerns.