



BROUGHT TO YOU BY YOUR LOCAL WATER PROVIDERS

Bryn Mawr – Lakeridge
Water & Sewer District

Cedar River
Water & Sewer District

City of Bothell

City of Duvall

City of Edmonds

City of Mercer Island

Coal Creek Utility District

Highline Water District

King County Water District No. 20

King County Water District No. 45

King County Water District No. 49

King County Water District No. 85

King County Water District No. 90

King County Water District No. 119

King County Water District No. 125

Lake Forest Park Water District

Northshore Utility District

Olympic View
Water & Sewer District

Seattle Public Utilities

Shoreline Water District

Soos Creek
Water & Sewer District

Woodinville Water District

Eliminate Single-Pass Cooling *Save Water and Money*

How Single-Pass Cooling Wastes Water

Single-pass cooling systems remove heat by transferring it to a supply of clean water and dumping it down the drain. With now recirculations, this is an extremely inefficient use of water, resulting in unnecessarily high water and sewer costs.

Examples of cooling equipment that might have single-pass cooling include air conditioners, refrigerators, coolers and ice machines. Facilities often opt for single-pass systems because of they are relatively inexpensive to install. These savings are short-lived. Single-pass systems are significantly more expensive to operate, resulting in high water and sewer bills.

Cost-effective Alternatives

Cost-effective options for replacing existing single pass systems, include:

- Packaged air-cooled equipment - install stand-alone air-cooled ice machines and coolers.
- Closed-loop piping - recirculate cooling water to a remote air-cooled chiller or cooling tower, or connects to an existing closed-loop system serving another area of the building.
- Split-system - use heat pumps with remote air-cooled condensers.

**WE'LL PAY YOU TO
MAKE THE CHANGE!**
Call (206) 684-5883 to receive a rebate of up to 50% on any cost-effective project to eliminate single-pass cooling.

How Much will it Cost?

Installation cost and subsequent payback period varies with the complexity of the system. Payback periods, taking into account a 50 percent utility incentive, may be as low as 1.5 years. Additional savings may be attributable to the increased energy efficiency of more modern equipment.

How Much can You Save?

Savings will vary according to the size of the cooling system and hours of operation. Savings typically range from around \$50,000 to over \$100,000 per year. This is based on a rough estimate of \$1,000 per ton annually (12,000 BTUs per hour) for replacing a single-pass system that operates 25 percent of the time. The back of this sheet provides steps for estimating savings and results from typical projects. WaterSmart staff are available to help you determine more accurately the size of the savings you can expect.

SAVING WATER PARTNERSHIP

Steps to estimate annual water and sewer savings

1. Determine annual water usage for your single-pass system. For estimating, use 1 gpm per ton of compressor load. Multiply by 525,600 (minutes per year), times the percent of time your equipment operates, to obtain an estimate of annual usage.
2. Divide calculated water savings by 748 to convert from gallons to ccf (hundreds of cubic feet).
3. Multiply potential water savings in ccf by projected water and/or sewer charges. (Rates vary depending upon your water and sewer utility.) Within the City of Seattle, combined water and sewer charges are around \$5.50 per ccf. Your local rates may be determined either from your bill or by calling your local utility.

Single-Pass Cooling for Major Replacements

Business Type	Project Cost	Incentive Payment	Annual Savings	Simple Payback(yrs)
Office Building	\$26,000	\$13,000	\$5,581	2.3
Research Center	20,265	10,133	6,803	1.5
Medical Building	26,239	13,119	2,929	4.2
Office Building	26,000	13,000	2,640	4.9
Drug Store	48,890	19,556	10,000	2.9
Small Retail	77,387	38,693	7,024	5.5
Medial Building	432,121	177,790	67,685	2.0

Financial Incentives & Technical Assistance for Making Changes

The Water Smart Technology program provides free technical assistance and project rebates to help you eliminate single-pass cooling:

1. Make sure you are a customer of a participating water provider listed on the front of this fact sheet.
2. Call (206) 684-5883 to receive a program application and free technical assistance.
3. Submit the completed application and receive an approval letter from program staff.
4. Remove old single-pass equipment and install new air-cooled, closed-loop or split-system equipment.
5. Submit invoices and paperwork to the Water Smart program.
6. Receive a rebate for up to 50% of project cost.

It is advisable to work with a reputable HVAC service company or licensed Mechanical Engineer to determine the most cost-effective option for you.

Success story: Medical Dental Building

In 1994, the Medical Dental Building was one of the largest water users in downtown Seattle. Metering and analysis of other building water uses showed that the building's consumption could be substantially reduced by replacing the building's once-through heating and cooling system with an all air system.

The project budget was approximately \$440,000, with 41 percent of the project cost paid by the Water Smart Technology Program. The building has saved an average of 56,978 gpd. Savings will be much greater during the cooling season. The simple payback for the project, including the financial incentive, received was about two years.