

WATER HEATING

ENERGY CONSERVATION AND EFFICIENCY IN SITKA

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HOT WATER USAGE AND COST

Water heating is the second largest consumer of household energy, after space heating.

Showers and baths use 37% of the hot water in the house.

Of every \$100 spent on heating and electricity, \$14-25 goes towards heating hot water.

- A 5-10 minute shower uses 10-20 gallons of hot water.
- Yearly hot water heating for a family of four each taking one 5-10 minute shower a day can cost \$160-320/year.
- A bath uses 20 gallons of hot water.
- Daily baths for a family of four can cost \$320/year.
- A washer uses 32 gallons of hot water.
- Washing 4 loads of laundry per week (on warm setting) can cost \$73/year
- A dishwasher uses 8-14 gallons of hot water, depending on the settings.
- Dishwashing can cost \$23-40/year if washing 5 loads per week using a dishwasher.
- Hand dishwashing uses 4 gallons of hot water every use if you fill the sink with water for soaping and rinsing. Other methods use more hot water.
- Hand dishwashing once a day can cost \$16/year. Hand dishwashing after every meal can cost \$48/year.



HOT WATER CONSERVATION TIPS

- Use cold water when washing clothes if appropriate. Make sure settings are appropriate for the size of the load (small, medium, large, etc.)
- 85-90% of the energy used to wash clothes goes into water heating, so reducing hot water use will save energy.
- Set hot water heater at 120°F. Dishwashers require a temperature of 140°F, but most have internal boosters to reach this temperature.
- Install low flow shower heads (1-2.5 gallons/minute).
- Wash full loads of dishes and clothes.
- Insulate hot water pipes in areas that are not heated, although it is best to locate the hot water heater in a heated space to reduce heat loss to surrounding air.
- On electric hot water heaters, a timer can be installed so that water is only heated when it is needed. It may be necessary to consult a professional to have this installed.
- Fix drips and leaks. One drip per second can waste over 3,000 gallons/year.

**FOR MORE INFORMATION,
CONTACT THE CITY AND
BOROUGH OF SITKA ELECTRIC
DEPARTMENT
OR
THE SITKA CONSERVATION
SOCIETY**

<http://www.cityofsitka.com>

<http://www.sitkawild.org>

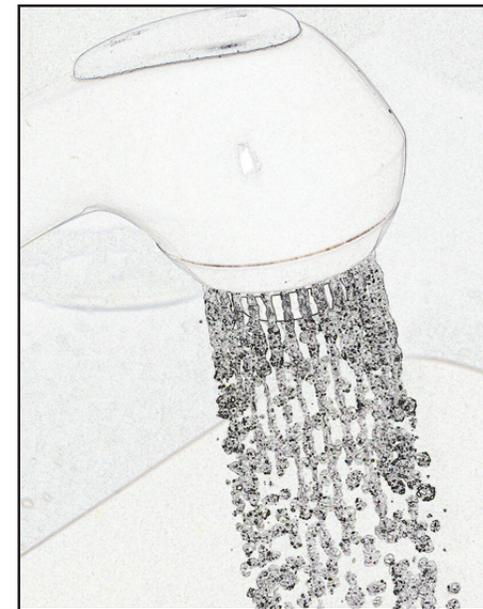
WATER HEATING IN SITKA

EFFICIENCY OF WATER HEATERS AND INSULATION

- In Sitka, water heater insulation quality is not critical if the heater is located in the house, as heat losses will contribute to heating the home.
- If located outdoors or in a garage, a water heater insulation is important and a blanket can be used to increase insulation on less insulated models.
- The ENERGY STAR label ensures high-quality, well-insulated water heaters. In Sitka, ENERGY STAR products are available at hardware and appliance stores.

REPLACING A HOT WATER HEATER

- Hot water heaters last between 8-10 years. When replacing one, purchase the most energy efficient model and place it indoors so that any heat loss will contribute to home space heating.
- Federal tax credits for energy efficient hot water heaters may be available if you upgrade between Jan. 1, 2006 and Dec. 31, 2007,
- The Electric Department does not support the use of tankless water heaters due to high installation costs. Sitka's cold average water temperature presents problems. Look online at the Electric Department website for more information. Smaller, point-of-use heaters for kitchen and bathroom sinks may be viable.



Activity	Hot water use	Cost per use (\$)	Annual Cost (\$)	Conservation use	Money saved (\$)
10-minute shower	20 gallons	\$0.22	\$320/year for family of 4 each taking daily shower	Take a shorter shower (5 minutes) to cut hot water use in half to 10 gallons per use.	\$160/yr for family of 4 taking daily short showers
Bath	20 gallons	\$0.22	\$320/yr for family of 4 each taking daily bath	Take a short shower instead of a bath.	\$160/yr for family of 4 taking daily short showers
Dishwashing (automatic)	14 gallons	\$0.15	\$40/yr for washing dishes 5 times per week	Use energy savings settings to reduce number of rinses and water used to 8 gal.	\$17/yr if washing dishes 5 times/week
Dishwashing (hand)	4 gallons	\$0.04	\$48/yr or more for washing dishes 3 times each day	To hand wash dishes, fill sink with soap and warm water for washing, then fill sink with cold water for rinsing. Do not run water while washing dishes. Wash only once/day or use automatic dishwasher.	\$32/yr if washing once per day using method previously described. \$25/yr if automatic dishwashing 5 times per week on energy saving settings (automatic dishwashers wash larger loads).
Washing clothes (warm/warm)	32 gallons	\$0.35	\$73/yr to wash 4 loads/week	Washing on cold setting cuts hot water use, as does washing full loads only and making sure size settings match load size (S, M, L, XL). Cold water should be used to rinse clothes.	\$36/yr by washing only 2 full loads per week. Even greater savings can be realized by using the cold water setting.
Washing face	1 gallon	\$0.01	\$32/yr for family of 4 each washing face twice/day	Do not leave water running while washing face. This will cut water use to 1/2 gallon.	\$16/yr for family of 4 each washing face twice/day

OTHER RESOURCES

http://www1.eere.energy.gov/consumer/tips/water_heating.html

<http://www.aceee.org/consumerguide/topwater.htm>

WaterWiser Drip Calculator: <http://www.awwa.org/advocacy/learn/conserve/drip-calc.cfm>

<http://hyperphysics.phy-astr.gsu.edu/hbase/thermo/houseenergy.html>

<http://www.cityofsitka.com/dept/electric/faqs.htm>