

Commonplace, convenient, low in cost -- it is hardly surprising that little thought is given by the average Canadian to this most necessary commodity.

Twenty gallons to take a bath or do the laundry, ten gallons to wash dishes, five or six gallons to flush the toilet -- all this water is used without much thought in the average household, which uses some 50 gallons a day per person. Industries located within cities also use a very large amount of water, much of which comes from municipal supplies.

The city of Ottawa in 1965 used 100 gallons a day per person. Winnipeg used 80 gallons per person, Vancouver and Montreal about 120 gallons and Toronto about 175 gallons per person per day. Industrial use accounts for most of the difference between the average of 50 gallons a day per person and the city's total consumption. Per capita use for domestic purposes probably does not vary appreciably from city to city.

Industry. Industry has an enormous thirst for water. The largest quantity is used for cooling purposes, but considerable quantities are also used directly in many manufacturing processes; another important use is in plant sanitation. Frequently, figures are published to indicate how much water is used in various industries -- figures like 10 gallons of water to refine a gallon of gasoline, 18 barrels of water to refine a barrel of oil, 250 tons of water to produce a ton of sulphate wood pulp, 100 gallons of water to produce a gallon of alcohol. These figures are interesting as a general indication of the need for water, but they may be misleading. Far too often they reflect the fact that water is easily available, inexpensive, and therefore often used inefficiently.

Take for example, the amount of water required in the production of steel. The usual, or average, amount of water used to produce a ton of steel is about 60,000 gallons; yet there is a steel mill in California which, by cooling and recycling its water uses only about 1,400 gallons per ton of steel produced. A wide variation like this is by no means unusual. When water becomes scarce, and therefore valuable, it can be and is used much more efficiently than if it is plentiful and cheap.

The fact remains, however, that water is an essential material in all industrial operations and increasing industrialization inevitably leads to greater use of water.

It is impossible at the present time to say exactly how much water is used by Canadian industry. Some industrial plants purchase water from their municipality. Others find it more convenient, or more economical, to develop their own water supplies by drilling wells, or by building their plants beside a lake or a river.

Many industrial uses are non-consumptive in nature -- that is, the water is returned to a stream channel after it has been used. The returned water, however, is often polluted, either by the addition of undesirable material or by heating during use. Pollution of this kind is a constantly increasing problem wherever industry is concentrated in Canada, particularly on some of the Great Lakes, on the St. Lawrence River and on some rivers in British Columbia.