

2ndOpinion

READERS' VIEWS IDAHO WATER

Conserving, reusing wastewater is solution to shortage

Across the United States water supplies are drying up (see Statesman article on Oct. 27). Population growth could lead to similar problems in the

Treasure Valley. If growth continues as it has in the past, much of the agricultural land in the Treasure Valley will be converted to homes and businesses over the next 50 years, and water

use will change.

As a water resources engineer, I often use a simple water balance equation when assessing water supplies for industries, cities and agencies: Inflow minus consumptive use equals outflow. Consumptive use is water loss due to evaporation and transpiration. In the past, 90 percent of the consumptive use in the Treasure Valley was through agricultural irrigation. Con-

sumptive use will change as the population grows and homes are (some-what unfortunately) built on crop land.

To understand the significance of the change, we can apply the water balance equation to an acre of land, then to the Valley as a whole. For a rough analysis, assume inflow into the Valley remains about the same (ignore global warming). An acre of crop land in the Treasure Valley consumes a little over two feet of water per irrigation season. That's two acre-feet spread over an acre of land, or about 700,000 gallons per acre.

Now compare that to domestic use. Typically, a person uses about 75 to 165 gallons of water per day. Let's assume 110 gallons of water per day is used. If there are three people per home and three homes per acre, that's about 360,000 gallons per acre, or about half of the annual water consumed by an

acre of crops. To estimate irrigation of lawns and landscaped areas, I checked my personal landscape use, and it's about 2.5 feet. Assume half of the future residential land (one-half of the acre) is grass, shrubs and trees, and the irrigation rate is similar to mine. Over half the crop water needed for one acre would be consumed to irrigate urban landscaping (420,000 gallons per acre per year). And so, with in-house and irrigation use combined, domestic water use would appear to be about the same.

We could do things differently. Regarding in-house domestic use, we could be much more efficient. Also, the actual amount of water consumed is only about 20 percent to 30 percent; the remainder is wastewater. That means there could be about 240,000 gallons of wastewater for each acre of land. What if we reclaimed the waste-

water to irrigate landscaped areas? Better yet, what if we shift to drought-tolerant landscaping, and only irrigate with reclaimed wastewater?

The water balance equation adds some perspective on how much water this might be.

With some planning we can substantially reduce individual domestic water use, perhaps leaving more than 50 percent of the water available for some other use.

Currently there are more than 150,000 irrigated acres in the Treasure Valley. If 50 percent of the crop water is not consumed, and inflow stays the same, over 150,000 acre-feet remains for other uses (or increased river flows).

That is more than half of the water stored in Lucky Peak Reservoir! And, it doesn't require "taking" water away from anyone, just reducing consump-

tion and reusing our wastewater.

Water use is changing. We can continue to use our water to irrigate lawns and discharge partially treated wastewater into our rivers. Or we can decide to install low water-use fixtures, xeriscape our residences and reuse reclaimed wastewater. These are viable environmentally sound alternatives that are now available and, unfortunately, only being used locally by a few. With some community planning we could do much more and avoid "drying up" this exceptional resource.

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