

Creating an Oasis, Part Two: Water Consumption, Pricing and Conservation in Utah

Research Report #650, April 2002

Lesson Summary

Utah is the second largest per capita water consumer in the nation and also has some of the lowest water prices in the West. Residents in the state can practice conservation measures in order to lessen the impacts of the drought.

Related Websites

- U.S. Geological Survey water use data: water.usgs.gov/watuse
- Soil and Water Conservation Society: www.swcs.org
- Conservation tips from Utah Div. of Water Resources: www.conservewater.utah.gov

Utah Core Curriculum

- STD. 6100-06 Students will understand the impact of contemporary issues on the people of Utah
- STD. 6210-05 Students will understand basic economic principles and how they influence everyday life.

Related Classes

- Utah Studies
- Economics
- U.S. History/Government

This lesson plan is provided by Utah Foundation to assist in using the accompanying Research Report in high school or middle school classes. Please feel free to copy the Research Report for your students.

Find overhead masters for this lesson on our website at: www.utahfoundation.org/schools.

Vocabulary

Ameliorate: To make better or improve.

Commodity: A basic product or item easily bought and sold.

Culinary: Related to cooking. Of good enough quality to be used in food preparation.

Disseminate: Spread or scatter, as in spreading news or information.

Drought: A prolonged period of low rainfall, causing hardship for water users.

Equitable: Fair, just, providing a reasonable share.

Infrastructure: Basic structures and systems provided for community use, such as highways, schools, sewers, and electrical systems.

Levy: To impose or bill to another, such as a tax.

Municipality: A city or town, usually referring to the government of that city or town.

Property Tax: A tax imposed on owners of property, usually as a percentage of the value of the property, payable once a year.

Public Good: Something useful to the general society more than to individuals, usually paid for by society as a whole.

Quick Questions

1. What is the average amount of snow pack, in inches, in Utah? What is the current snow pack level?

Answers: 16.8 inches and 12.3 inches

2. What group is the largest water user in Utah and what percent of the total available water do they use?

Answers: Agriculture – 85 percent

3. What percentage of Utah's water is used for residential purposes (domestic use)?

Answer: 7.8 percent

4. Using Figure 5, determine in how many states water consumption is growing faster than the population. Which states are they?

Answer: 13 states: Wyoming, Oklahoma, Iowa, Connecticut, New York, Mississippi, Illinois, Indiana, Missouri, Arkansas, Nebraska, Kentucky, New Jersey

5. How many gallons are used a day per capita in Utah homes for outdoor purposes?

Answer: 115 gallons (183 gallons per capita per day residential use, multiplied by 63 percent and rounded to the nearest whole gallon)

6. According to this report, name the conservation measures that can be practiced in the home?

Answers:

- Ensure the lawn is not over watered.
- Retrofit structures built before 1993 with low-flow plumbing devices.
- Keep swamp coolers in good repair or switch to air-conditioning.
- Plant outdoor vegetation that requires less water.
- Do not water during daylight hours – too much water evaporates off and can weaken the root structure of the plants, causing them to need more water to thrive.

7. What is block rate pricing of water?

Answer: The first 'block' of water is charged at a flat rate. The next block is smaller and charged at a higher rate, additional blocks are smaller and priced higher than the previous ones.

8. Using Figure 7, determine what the cost of 183 gallons of water would be in the following cities: Reno Nevada, Los Angeles California, Albuquerque New Mexico, and Provo Utah.

Answer: Reno: \$0.62, Los Angeles: \$0.41, Albuquerque: \$0.26, and Provo: \$0.14. (Dollar amount in Figure 7 divided by 1,000 gallons, then multiplied by 183 gallons and rounded to the nearest whole cent.)

9. What percentage of Salt Lake County's water funding comes from billing the users?

Answer 49.5 percent

10. Who determines what a bond rating will be?

Answer: Analysts working for rating companies, such as Moody's, Standard and Poor's and Fitch.

Critical Thinking Activities

1. Obtain copies of water bills for a home for an entire year and the property tax bill for that same year from your local community. By reviewing the information found in both, have the students try to determine what percentage of water costs is paid for by that homeowner through billing and what proportion is paid for through property taxes. Have the students discuss whether water billings reflect the true cost of water to your community? Are they too high or too low? Why?
2. Divide the class into groups; each group will represent the governing body of a water agency. Each group should choose how they will price their water; by a combination of taxes and billing, straight pay-per-use, block rate pricing or by another method. Each group should determine the price of its water and then look at that price's effects on community life. How will businesses fare under the pricing system? Residents? Wildlife and open space? Agriculture?
3. Is water usage an example of elastic demand or inelastic demand? How would increasing the price of water affect consumption? What are some other ways that the government Utah could encourage voluntary reductions in water use? Which do you think would be the most effective? Why? What controls could they enact by ordinances or laws? How do you think the people would react to these rules?

Quiz Page

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Ameliorate	Drought	Municipality
Commodity	Equitable	Property Tax
Culinary	Infrastructure	Public Good
Disseminate	Levy	

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