

Facts on Snowmaking

Water use for snowmaking is not a “consumptive” use

It is important to keep in mind that water used for snowmaking is not considered a “consumptive” use of water. Most of the water diverted from streams for snowmaking *returns to the watershed*. Although it varies from region to region, a number of state studies show that approximately 80 percent of the water used for snowmaking returns to the watershed. Since the majority of water used for snowmaking is water purchased by a ski area and brought onsite through diversions, snowmaking greatly benefits the watershed in which it is taking place by adding water that would not otherwise be there.

Water use is minimized in snowmaking

Ski resorts implement a number of water conservation measures to make snowmaking highly efficient. Examples of water efficiency measures include:

- Installing water coolers to lower the ambient temperature of the water and allow less water to be used;
- The use of efficient snow-guns to increase the volume of snow produced from a given amount of water; Reducing the amount of water used in freestyle terrain by using dirt, rather than snow, in the construction of half pipes and other features;
- The installation of flow meters on snowmaking systems to accurately measure water usage;
- Actively monitoring and repairing leaks in the system; and
- Using high quality, reclaimed water for snowmaking.

In addition to these conservation measures, many resorts impound or store water in reservoirs for use during low flow times of the year without affecting fish or aquatic habitat.

Resorts have energy efficient snowmaking

Ski areas have made significant investments in reducing energy consumption and increasing efficiency. Snowmaking system efficiency measures include:

- Installation of state-of-the-art snow guns using efficient 1:1 air/water ratio technology;
- Using gravity-fed diversion or delivery systems;
- Installation of state-of-the-art air compressors, including centrifugal air compressors to replace rotary screw compressors. The newer centrifugal compressors do not require oil lubrication, making them more environmentally friendly and energy efficient;

- The use of computer automation, real-time controls, sensors, and monitoring systems to optimize snowmaking systems;
- Monitoring and repairing air leaks in compressors;
- Utilizing Variable Frequency Drives (VFDs) on water pumping systems to dramatically decrease energy consumption;
- Utilizing oscillating snowmaking machines that reduce the need for grooming machines to spread out snowmaking piles and thereby reduce fuel consumption;
- Mounting tower guns on poles 10 feet above the ground that allow snow to spread out further and significantly improve the suspension of the created ice crystals; and
- Adjusting pipe size to reduce friction losses in the pipe, reduce horsepower requirements, allow the use of smaller pump motors and thereby reduce excess energy usage.

Reducing energy consumption through these measures helps clean the air and reduce greenhouse gas emissions associated with climate change.

Snowmaking provides tremendous economic and social benefits

Eighty-eight percent of NSAA's member ski areas make snow. Snowmaking provides tremendous economic benefits to rural communities by enhancing reliability of snow conditions and in turn stabilizing the local economy and work force. Snowmaking also allows millions of Americans to get the health and physical benefits of being active in winter.

Snowmaking water is critical in fighting wildfires

Ski area snowmaking storage reservoirs play a critical role during the summer months in supporting fire protection. Snowmaking reservoirs provide helicopters easy access to water in remote areas during fire suppression operations. In addition, extensive water pipe systems at ski areas allow for water to be transported to remote areas during fire fighting activities.