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SPOTLIGHT

ARIZONA OPINION

# Arizona opinion: Technology is changing the game: Why Arizona's golf-water debate needs a reset

**Sean Petersen Special to the Arizona Daily Star**

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*The following is the opinion and analysis of the writer:*


Arizona is one of the driest states in the U.S., and with the Colorado River, its main source of water, under growing pressure, every gallon of water matters. Thus, it's understandable that many see the golf industry, with its vibrant green fairways, as a reckless consumer, while communities are forced to cut back on water consumption.

The debate seems clear: Golf apparently takes up too much water that Arizona residents could otherwise use. Yet, there is more than meets the eye. Technology is rapidly reshaping water use in the golf industry, achieving significant reductions. Moreover, golf is a steady source of income in Arizona's tourism sector. So, the oversimplified water vs. golf debate deserves a closer look.

## Golf's importance in Arizona's economic landscape


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Golf generates over 66,000 jobs and $6 billion in annual economic impact in Arizona. This sport attracts 3.7 million visitors each year to the Grand Canyon State. Golf enthusiasts who visit Arizona spend 2.9 times more than regular tourists. The WM Phoenix Open alone, one of the most attended golf tournaments in the U.S, brings around 700,000 tourists each year.

Moreover, golf has a ripple effect on Arizona's economic landscape, impacting various other sectors such as restaurants, hotels, and retail businesses. Tourists who visit Arizona for its golf courses also dine out, book hotels, and use various other tourism-related services, which support the local economy.

All the while, golf course irrigation accounts for approximately 2% of Arizona's daily water consumption. This is possible thanks to the numerous technological advancements that turf irrigation is now relying on.

# The new, technology-driven face of golf irrigation in Arizona

Turf irrigation in Arizona no longer relies on traditional irrigation practices. Every gallon of water is wisely used when and where needed. Systemic initiatives such as the USGA's $30 million water conservation investment and new irrigation technologies and methods have significantly improved irrigation efficiency.

Tech-enabled water savings are powered by groundbreaking AI-based irrigation systems that rely on precision data and satellite mapping. These systems monitor the turf and provide clear details on evapotranspiration rate, radiation, wind, humidity and other external factors to help schedule irrigation. Thanks to these systems, water is no longer used irrationally when or where the courses don't actually require it.

Another core technology that reduces water consumption for golf courses is the subsurface moisture sensor. These sensors have been used since the 2000s, and they eliminate the guesswork in irrigation by pinpointing the areas that require water.

Smart irrigation controllers are another innovation that, as UCANR research shows, can reduce water use by up to 50% on golf fairways.

Subsurface drip irrigation also supports water resilience efforts in Arizona's turf management. This irrigation method helps deliver water to the roots, therefore reducing evaporation losses.

Furthermore, golf courses in Arizona increasingly rely on drought-resistant hybrid turf varieties to further decrease water use. Other innovative techniques, such as microbiome or seaweed-based biostimulants that enhance the root structure and reduce turf water requirements, are also tested in Arizona's golf industry.

Besides these smart irrigation technologies and methods, what is more important is the source of water that golf courses use. Despite its bad reputation as a high-water-consuming industry, many golf courses largely rely on wastewater in Arizona. Since

the 1990s, in Scottsdale, 23 golf courses have been irrigated through the local Reclaimed Water Distribution System (RWDS), which generates 20 million gallons of non-potable water per day.

Tucson is another example; it has been using wastewater for golf turf irrigation since 1984. With this type of closed-loop system, golf isn't using the precious tap water of Arizona residents. In fact, this infrastructure has helped save 100 billion gallons of potable drinking water since it was first implemented.

Arizona's golf industry has proved that sustainability and economic growth are not mutually exclusive, but can go hand in hand. The developments in irrigation make it possible for a water-dependent industry to continue operating profitably while adapting to increasingly stringent water-consumption regulations.


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Sean Petersen is the founder of Golf Trip Junkie and has spent years studying the intersection of golf, tourism, and destination economies. Through his work planning golf travel across the United States, he has developed a strong interest in the environmental, economic, and community role of golf courses in modern cities.