

The Air Force Academy at Colorado Springs is another golf course recreational turf facility which is watered with recycled water - successfully.

The Sharp Park golf course near San Francisco operated successfully from 1932 through 1976 with effluent from the county jail. In 1976 the flow from the county jail was tied into a new sewer system. However, recent drought developments have caused the local officials to consider re-establishing their use of the effluent water for irrigation purposes. The only complaints at this golf course were those of a few players complaining about the odor at the beginning of each season, after the ponds had been sitting for most of the winter.

Another case would be at Innisbrook Golf Course near Tarpon Springs in Florida. There are 63 holes completely irrigated with effluent water on all the tees, fairways and roughs. An effluent treatment plant was built in 1975 by the Pinellas County Pollution Control Department. To dispose of the effluent the county would have been required to build an expensive wastewater disposal system which would carry the sewage effluent far out into the Gulf of Mexico to avoid potential shoreline pollution problems. Meanwhile, Innisbrook was having a problem with salt infusion into their fresh water wells. Therefore, the use of the golf course as an on-land disposal area for the county's effluent was an answer to problems of both parties, and the county contracted with Innisbrook to deliver 3,000,000 gallons per day by underground pipeline, constructed by the county, to Innisbrook, where this water is fed into five pumping stations located throughout the golf course properties.

One of the problems in using recycled water is the pollution by dilution aspect. My friends from Minnesota tell me that one of the earliest instances of pollution by dilution in their water was when the legendary Paul Bunyan's ox "Babe" who was a massive animal who consumed great quantities of food and built up a resultant mess in the barnyard. The local residents became quite upset and complained to Paul, who analyzed the situation and then reached over and with one hand took the Crow Wing River and with the other the San Croix River and channeled them through the barnyard and cleaned out the mess. The resulting stream is today known as the Mississippi River. It is said that a glass of water drawn from a tap in New Orleans, having originated in Minnesota, has passed through approximately five toilets and has been reclaimed as potable water.

The golf courses along the north branch of the Chicago River are known around the world as some of the finest golf courses in existence. These golf courses have been watered for over fifty years with water drawn out of what is in essence a drainage ditch.

Recent studies have shown that in periods of low flow these waters tend to contain more pollutants which may be detrimental to the development of fine turf grass; consequently, during these periods the golf courses have been supplementing their irrigation water from the canal with fresh water from the city water lines.

The North Shore Sanitary District is in the process of completing a new water treatment plant in Highland Park, Illinois. Mr. John P. Kottcamp, Jr., the engineer for the North Shore Sanitary District, is working with the local golf course superintendents and the University of Illinois to develop some test plots to determine the feasibility of using the effluent for turf grass irrigation, with the idea that should the tests prove positive, as anticipated, the North Shore Sanitary District will install a water main to carry the effluent water along its right-of-way to supply water to the golf courses, parks and other

recreational facilities within their jurisdiction for irrigation purposes.

I believe that it is important that you keep records. Get a water meter and keep records of your actual water usage so that in the future, should you become restricted in the use of water, you can establish your claim for your needs based on historic usage -- that you have been using "x" number of gallons of water. If you get nothing more from this conference, in the future this could be one of the most important things you could constitute at your clubs.

Probably the greatest achievement in the history of mankind has occurred in our lifetime. Man has gone out into space, walked on the moon and returned to tell about it and we have had the privilege of watching the whole thing on our television sets. One of the most stirring things to come out of the space program has been the picture of the planet Earth taken by the astronauts from space. It has made us realize that this beautiful fragile sphere on which we exist is really Spaceship Earth and its care has been entrusted to us.

Water is the primary source of life on this planet -- there is no new water, only recycled water. Our responsibility is to use it, enjoy it, and leave it better than we found it.

**Richard Nugent**  
**Golf Course Architect**

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"If you have built castles in the air, your work need not be lost; that is where they should be. Now put the foundations under them."  
Henry David Thoreau

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