

Cost Benefit of Groundwater-friendly Practices Salina Country Club, Salina, Kansas



Site Background

The Salina Country Club is located within the City of Salina, Kansas along the Smoky Hill River. The 140-acre site was established in 1911 and its facilities include an 18-hole golf course with driving range and practice areas, four outdoor tennis courts, an outdoor swimming pool and other amenities.

The Salina Country Club golf course includes water features, mature trees, continuous cart paths, gentle rolling terrain, and a challenging layout.

Salina Country Club has participated in the Groundwater Guardian Green Site program since 2008, and also participates in the Audubon Society's Cooperative Sanctuary Program for golf courses.

Groundwater-friendly Practices

The Salina Country Club recently underwent a major renovation under the direction of Class A Certified Golf Course Superintendent Mike Hulteen. It began with the installation of a new, state-of-the-art computer-controlled irrigation system, and included new putting surfaces, replacement of the turf in the surrounds, bank stabilization around the water features, and the expansion of the practice areas.

Many of the Country Club's groundwater-friendly practices have focused on water conservation, as a means of environmental protection and cost-savings.

The course converted the grass on its fairways and tees from a combination of blue grass and rye grass to the more drought-tolerant varieties of Zoysia grass. Zoysia provides an excellent playing surface, but requires nearly 50% less water and 80-90% less pesticide, saving money in both chemical and irrigation costs. In addition, the blue grass and rye grass in the course's roughs was also replaced with proven varieties of turf-type fescue. Other old grass varieties on the greens have also been replaced with an extremely drought and disease resistant variety of bent grass.

Club staff saw the need for the replacement of the club's 34-year old irrigation system. Even though it would come with a substantial price tag, a new system was necessary to decrease the cost of irrigation and to conserve local water resources. The state-of-the-art system is computer-operated to provide precise control of water from the irrigation wells to course application. It actually includes more irrigation heads than the old system, but allows staff to efficiently water more of the golf course in less time, all while using less water. The new system also includes moisture sensors to prevent unnecessary irrigation cycles during rain events.

Club staff implement deep and infrequent irrigation cycles to promote a deeper, healthier root system in the club's turfgrasses.

Recycled water is also utilized to a small extent at the Country Club. Water from the clubhouse's ice machine is utilized to provide water to a small decorative waterfall and to water ornamental plants and gardens.

Other water conservation practices that provide economic and environmental benefits to the Club's operations include:

- Application of fertilizers that build a more rigid turf plant that requires less water.
- Root-plowing along the fairways and around the greens to eliminate competition between the trees and turf for water.
- Increase in height of cut on the roughs and surrounds.
- Extensive use of mulches in the ornamental areas.
- Regular aerification and topdressing to control thatch accumulation that blocks water penetration into the turf's root zone.

Club staff has also been in discussion with representatives from the City of Salina about the possibility of using treated water from the City's wastewater treatment plant to irrigate portions of the golf course. Using recycled wastewater would allow the City to reduce the amount of treated wastewater discharged into surface water supplies and the Country Club to decrease demand on its irrigation wells and provide an economic benefit to the club.

The Salina Country Club implements a number of other groundwater-friendly practices at their site, such as:

- Annual soil testing to determine nutrient requirements and fertilizer application based on nutrient analysis.
- Use of integrated pest management practices to minimize pesticide applications.
- Adding or replacing plants based on the region's climate.
- Proper fertilizer and pesticide storage, mixing, and application practices.
- Maintaining no-application zones around surface water and wells.
- Annual testing of private drinking water well.
- Proper disposal of hazardous substances (i.e. batteries, old tires, used motor oil, etc.)
- Managing parking areas to minimize runoff and contaminant loading to nearby surface water supplies.
- Use of a re-circulating waterfall on the course's water features to naturally aerate the water to help control algae growth.
- Increased no mow/low irrigation native areas for wildlife habitat.

Learn more about the Salina Country Club by visiting www.salinacountryclub.com.



Salina Country Club



Utilizing the upgraded irrigation system



One of the course's water features