

How a Turf Reduction Saves Water

Location: Glendora Country Club, Glendora, California

Background:

- Glendora Country Club is located in a warm inland valley in Southern California, approximately 30 miles east of Los Angeles. The turf species include kikuyugrass tees, fairways and rough, and Poa annua putting greens.
- Potable water is used for irrigation and is supplied by the city of Glendora Water Department. Historical water use averaged

93.5 million gallons per year (2.84 acre-feet per acre per year).

- In 2015, the club participated in a “Cash for Grass” program sponsored by the water district that offered \$2 to \$3 per square foot for the removal of turf and replanting with low water use shrubs and ground cover.
- The initial step involved working with the club’s landscape architect and irrigation designer, Brent Harvey, and identifying turf



CASE STUDY

areas that had little impact on the playability of the course (near tees, along fence lines, sections of rough beneath trees where it was difficult to grow turf). Approximately 26 acres of turf were identified for removal. Plans were developed to adjust the irrigation system to the outline of the turf removal areas and retrofit with drip irrigation for watering of the shrubs and groundcover.

- The process involved spraying the turf removal areas with a nonselective herbicide, stripping the turf, spraying any regrowth with nonselective herbicide, then installing drip irrigation and plants. The last step was to spread wood mulch over the turf removal areas (known as “Drought-Tolerant Areas” or DTAs as they are called at Glendora). A local landscape contracting company did the turf removal, disposal, irrigation, planting, and mulching.



Results:

- The project resulted in a 27% reduction in water use.
- The cost of the project was covered by rebates from the water department, so there was no out-of-pocket expense incurred by the club.
- Although there was a savings of several thousand dollars for using less water, this was offset by the 20% additional labor and maintenance required for the DTAs.
- Maintenance of the DTAs involves spot-spraying weeds every two to three weeks, replenishing mulch one to two times per year, ongoing monitoring, repairing the drip irrigation system, and trimming plants as necessary.
- Since the project was completed in 2015, several shrubs and groundcover plantings have been removed due to playability issues and overgrowth. Much of the drip irrigation system has been capped and abandoned due to frequent breaks.
- In retrospect, current Superintendent Ross Johnson had the following comments:
 - Understand that the project will save water but that maintenance costs will be the same or higher for maintenance of the DTAs.
 - Consider redesigning the entire irrigation system as part of the project to achieve more uniform sprinkler spacing within the remaining turf areas.
 - Use fewer plants and smaller containers for replanting with the understanding that the plants will grow and eventually impact playability.