EWING

CASE STUDY

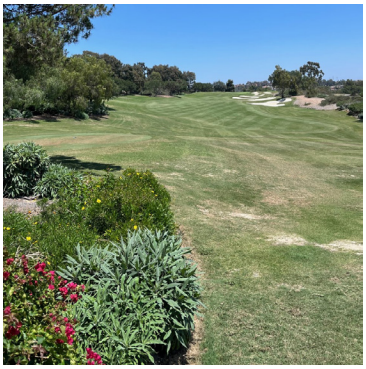
AUGUST 2022 | By Pat Gross

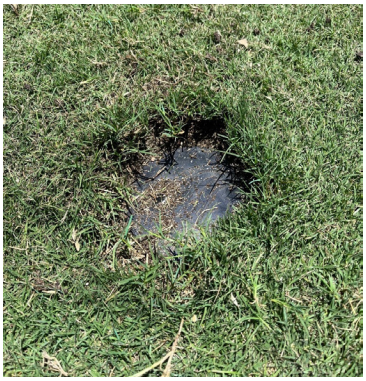
Using GroundWorx GX-1A Soil Sensors to Improve Irrigation Efficiency

Location: Fairmont Grand Del Mar Golf Course, San Diego, California

Background

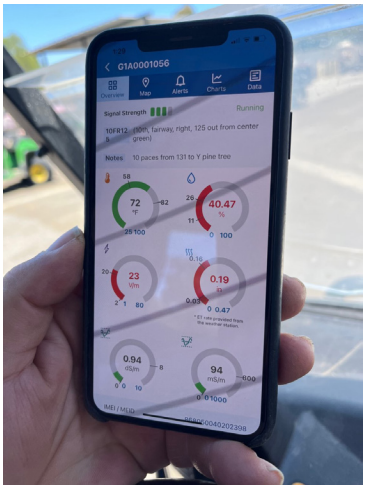
- The Fairmont Grand Del Mar Golf Course is in the northern part of San Diego. The course maintains hybrid bermudagrass tees, fairways, and rough along with creeping bentgrass/Poa annua greens.





- The water source is a blend of potable and recycled water. Even though the golf course is located in a relatively mild climate, the annual cost for irrigation was high at over $500,000 per year.

- Superintendent David Yanez decided to test the GroundWorx GX-1A in-ground soil sensors along with the micro weather station to see if the sensors could help refine water management decisions and reduce water use. A total of 18 sensors were placed in the ground–two were placed on greens, and the others were located on various tees, fairways, and rough and installed approximately 10 to 12 paces from existing sprinklers. The locations represented mostly average performing areas, and a few sensors were placed in chronically wet and dry areas. The in-ground sensors provided real-time data on soil moisture percentage, soil temperature, and salinity.



- The GX-1A Management Platform App was accessible on David's cell phone, which allowed him to monitor the data from each sensor throughout the day. Thresholds were set for high and low soil moisture that would trigger an alert on the dashboard. Soil temperature and salinity measurements were also visible on the dashboard. The information was reviewed each day when programming irrigation run times.

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Results

- In the past, irrigation programming decisions were based on a combination of evapotranspiration estimates from the weather station, the visual appearance of the turf, and occasional soil probe and portable moisture meter measurements. The GroundWorx sensors now provide actual soil moisture percentage, which has allowed David to stretch watering intervals knowing that there is still adequate soil moisture to keep the turf healthy for an extra day or more before irrigation is once again necessary.

- Records from 2020 (May to December) before the soil sensors were installed compared to the same time frame in 2021 with the soil sensors in place showed that 28% to 30% less water was applied to the golf course at a savings of approximately $135,000.

- Another beneficial feature was the ability to monitor soil salinity and make timely applications of soil wetting agents along with extra water to dilute salts and push them beyond the rootzone. David was able to see that the wetting agents were doing their job and allowed him to use just enough water to drop salinity without the need for over-watering.