

**GLOBAL POSITIONING SATELLITE TECHNOLOGY**

# Bell, Whistle or Tool?

We have seen the GPS units on golf cars. On an unfamiliar course, they certainly can help with strategy and club selection... assuming we have a golf swing capable of carrying out our good intentions. But has that technology had made significant gains in the maintenance side of the golf business?

There have been visionary depictions of a superintendent tracking pesticide and fertilizer applications, mapping irrigation and pest hot spots and even operating remote-controlled mowers. So, where are we on this march toward high-tech maintenance?

Many superintendents have benefited the most from the mapping aspect of GPS accurately located and identified irrigation systems. I can certainly remember time-consuming efforts to find a long-forgotten and unmapped isolation valve in my early days. We ended up making our own As-Built maps after repairs were made.

When I worked at Isleworth CC, one of the best tools I had was a wall-sized map of the irrigation system. It wasn't produced by GPS back in 1988, but the detail and accuracy was similar. Now it's just easier to produce and pull one up on a computer screen.

While we may still be taking cautious steps in using GPS in day-to-day maintenance, it is coming and will help the next generation of turf managers be more precise in practicing their craft. Here is a look at how our industry is using GPS technology today.

**IFAS PLANT SCIENCE RESEARCH TURF PLOTS, CITRA**

We rely quite regularly on GPS for numerous things. The pesticide depart-

ment uses it all the time for applications. The entire unit (more than 1,000 acres) has been mapped out using GPS. I have all of the current research projects marked out for records purposes as well. I also use it to find distances between areas. I can send you some pictures of our maps if you want.

*Mark Kann*

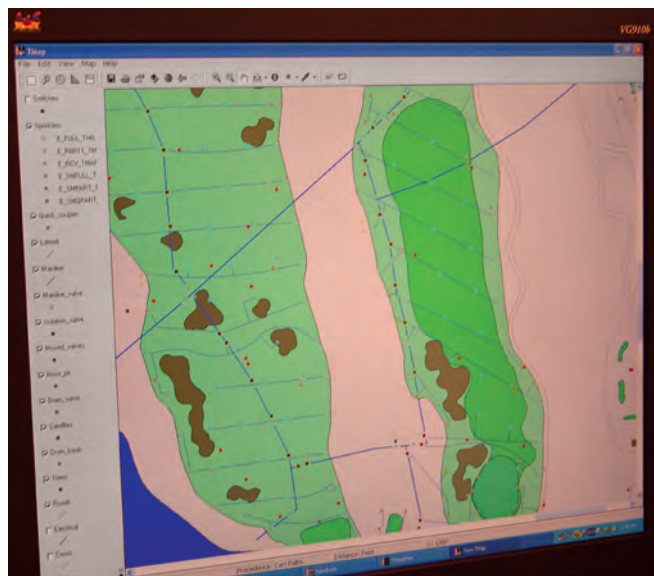
Turf Research Coordinator

**THE MOORINGS CLUB, VERO BEACH**

We used GPS mapping on the course in 2003 for a major renovation project. We were rebuilding the

of 2004. Because we had extensive flooding from Hurricanes Francis and Jeanne, we were able to determine the elevation of the storm surge by the debris lines found on the course. We then could shade in the map to show the level of flooding on the property. This made a vivid representation of the extent of the flooding on the property. This map was able to show that more than 70 percent of the golf course was flooded from the storm surge.

*Craig Weyandt*  
Superintendent



*This GPS map of the Old Collier irrigation system is a location, identification and management tool that provides for precise operation and maintenance of the system. Photo by Joel Jackson.*

greens to USGA spec. and correcting some other problems on the course at the same time. Since this involved the drainage system, I convinced the board to do a master drainage plan that incorporated the entire golf course under one plan for review with the SJWMD. The GPS mapping was able to produce a topographic map and show elevations of inverts of pipes, catch basins and turf areas. This plan was essential before beginning and while undertaking the project to make sure that water moved properly throughout the golf course during storm events.

Another use that I found for the map was after the hurricanes

**WINDSOR PARKE GOLF CLUB**

We are in the process of getting the course mapped for the OSMAC system. Unfortunately it won't be finished in time for the magazine deadline, but we are looking forward to working with the map for our operating and maintaining our irrigation system.

*Rip Phillips*  
Superintendent

**OLD COLLIER GOLF CLUB**

We had all our heads, valves, main lines, bunker edges, lake edges, cart paths, GPS-mapped during grow-in. We had Toro put it on the T-Map program for our irrigation. We use it to calculate area, total acreage of tees, greens, etc., to help find heads and valves when they get

lost, to help with hot spots and wet spots, we use it mainly for these types of applications.

In the near future Tim wants to purchase a backpack unit so we can go out and map our own areas, mole cricket colonies, hot spots, nematodes, grubs, etc. We have not used any other GPS units on sprayers or equipment here at our club.

*Todd Draffen*  
Superintendent

**HENDRIX & DAIL (Pre-plant Soil Fumigation Specialists)**

Five or six years ago, fairway fumigation began to expand with the contro-

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- ◆ Recommendations
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**Soil Testing**

- ◆ Greens, Tees, Fairways
- ◆ Analytical Report and Soil Fertility Recommendations

**Water Testing**

- ◆ Report & Recommendations

*In the business 40 years*

Jensen Beach, Florida  
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versy over certified turf and off-type contamination. We would often have to shut down the crew for two days in order to take and reconcile measurements of the total area being treated with a tape measure.

Accurate measurements are needed for several reasons. Accuracy is important to us for proper billing and to also to maximize the customer's budget and actual coverage. It also protects all parties from disputes concerning the billing.

While we have fairly accurate Raven computers on our injecting units, which measure the amount of product dispensed, but there is always overlap which can eat into the customers's budget. Using GPS units can help define the exact area treated. We still use tape measure readings to cross reference and compare so we can all agree on the numbers. GPS works best on flat ground and a certain error factor can still creep in with highly contoured

fairways, but that's why we cross check. We could do some 3-D grids with hundreds of plot points but that becomes a cost factor as well.

One of the best advantages I have seen is that by using GPS, we can really help the customer from going over budget and in some case extend the coverage because the area designated for treating wasn't as big as the customer thought. Then he can have us spot treat some other chronic hot spots and still stay within his original budget. Overall it is a great improvement for accuracy of applications, maximizing the customer's budget and reducing disagreements in billing.

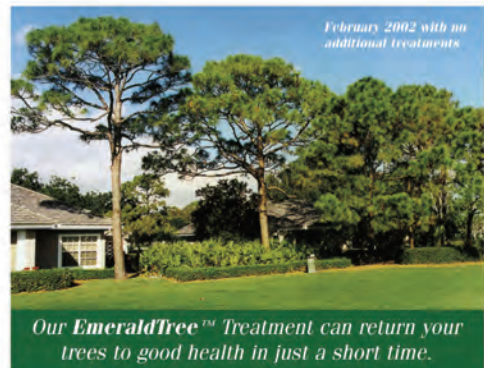
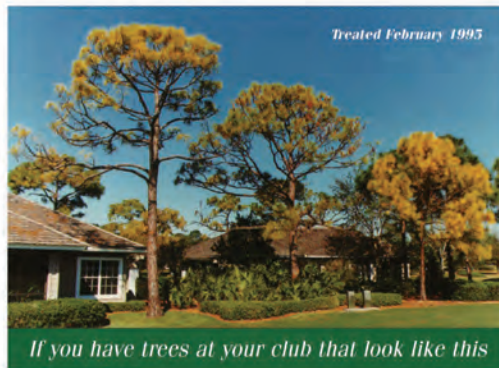
*T. J. Swaford,  
Hendrix & Dail*

There are plenty of high tech gadgets and gizmos rolling out all the time. It looks like GPS is the real McCoy and could be a meaningful tool in today's golf course management.

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