

CHALKBOARD

TIPS FROM THE PROS

COMPUTER-ASSISTED IRRIGATION SYSTEM MAINTENANCE

By Sal Genito



By using a lap-top computer, the irrigation specialist can determine repair needs from the field.

superintendents who have never used a computer. Once the program is installed in an IBM-PC type computer, it takes approximately one hour each week to run reports. The computer is free to handle other projects the rest of the time.

These are some of the problems with irrigation systems that can be detected and corrected by using the program: worn sprinkler wiper seals, clogged nozzles, stuck or misdirected sprinklers, low head drainage, leaking pumps, sprinkler head obstruction, damaged valve diaphragms, and improper pressure. The program helps me schedule important tests and repairs, eliminating much of the guesswork involved in maintenance.

An integral part of performing maintenance and repairs is attaining the right information related to field equipment, such as valve size and description, sprinkler nozzles, location, and warranties. This information can be provided to maintenance personnel in the form of computer-generated valve and sprinkler reports. Before they leave the shop, they know exactly what parts will be needed to restore the component to design specifications.

In addition, the computer keeps a history of repairs so maintenance can be preventative rather than curative. We use this information to put together our budget each year. It's just a more businesslike way of planning. The reports give me the documentation I need to support important purchases.

Once valves and heads are brought back to design specifications, the focus can switch to water conservation. The Irrigation

Manager contains the start and run times of all clocks for quick reference. With this information, we can make adjustments to achieve savings in water and pump energy use.

The program is a source of information, a data base that helps the sports turf manager make his own decisions. It is not linked directly to the irrigation system. The maintenance staff is still the eyes, ears and hands of the program. But by organizing irrigation maintenance, we have been able to manage our system efficiently and conserve water in the process.

This past year, I took the program a step further by providing my irrigation manager with a laptop computer he can use in the field. By copying the program onto a floppy disk, he has important information with him at all times and can record changes or repairs that have been made. At the end of the day, the new information is downloaded into my computer at the maintenance office.

If nothing else, the Irrigation Manager has given us time to study the feasibility of system-wide computerized irrigation control. When and if we do make the switch, we will already have the information needed for a new program. In the meantime, we are seeing definite advantages in water, energy and staff use. Furthermore, the irrigation system is running the way the designers intended it to.

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Water conservation is an important concern for anyone managing golf courses or other large recreational complexes today. Superintendents, grounds managers, maintenance supervisors, and water managers have the responsibility of using our precious water resource wisely.

To help us achieve our water management goals, manufacturers have developed tools, including low precipitation sprinkler heads, drip irrigation, computerized control systems, and moisture sensors. However, even the most efficient irrigation system can waste water without proper irrigation system maintenance. This entails routine checking, cleaning, adjusting, and verifying that the system is applying water to the intended targets on a specified basis. The size and complexity of sports turf irrigation systems makes this process a record-keeping nightmare.

At Clovis Unified School District (in Clovis, CA), I am responsible for many different irrigation systems located at schools throughout the district. As each new school site is completed, making sure that all the different irrigation systems and their components function to design specifications grows more complicated. Inspecting every system thoroughly once a week used to be hard to manage from both personnel and procedure standpoints. In some cases we were forced to wait for complaints from principals before we could make necessary repairs.

I needed to get a better handle on irrigation system maintenance. Using a computer to organize irrigation inspections and maintenance reports was an obvious solution. After making a list of common problems and ways to stay on top of them, I approached a computer programmer to put these ideas into software. Together we devised a program that has saved both water and money for the school district.

The program, called the Irrigation Manager, takes information gathered from the field and compares it to the design specifications. By recognizing inconsistencies between intended and actual performance, the program can generate a report that identifies problems with clocks, valves or sprinklers for needed repair or adjustment.

By entering simple commands, the program can be customized to fit any organization's needs. It has been designed for grounds managers and golf course