

# IRRIGATION SYSTEM PROGRAMMING GUIDELINES

How have you programmed your irrigation system? Are all of your sprinklers set to water for the same length of time? Or do you have your greens, tees, fairways and roughs set up to water for appropriate lengths of time depending on their water needs? Does each of your controllers run every valve for one long cycle every night? Or do you have your sloped areas set up to water a few times a night for shorter lengths of time than you're running the level areas of your course? Do you run your system seven nights a week for six months out of the year and three nights a week for the rest of the year unless the forecast calls for rain? Or are you adjusting your watering program on a monthly, weekly, or even daily basis? Depending on how you answered these questions you are either wasting a lot of water, energy and money, or you are probably managing your water and financial resources effectively.

You have an irrigation system on your course because you need to replace the water that is currently being used by your turf and trees. They draw water from the soil for nutrients, temperature control, and structural support but they eventually lose that water to the atmosphere through evaporation and transpiration. It doesn't help the turf or trees (or your budget) to add more water than they need to survive and grow. It doesn't help the root system development (or your drainage problems) if you supply the water faster than the soil can soak up and store it. Your turf doesn't need too much help from your irrigation system when the weather is cool or rainy. But, when it's the hot and dry season, you and your irrigation system are the turf's only chance for survival.

In order to effectively manage the programming of your irrigation system you need to evaluate how it operates according to the specific areas of your course. Here is a check list of some general irrigation items that you should evaluate and correct where necessary:

- \* Spacing between sprinkler heads is relatively uniform and spray pattern is throwing "head to head".
- \* Sprinkler nozzles are matched in size when operating from the same controller station.
- \* Full circle sprinklers are on separate controller stations from part circle sprinklers.
- \* Controller stations are separated according to zones with similar water requirements and soil characteristics, similar use patterns, similar slope gradients and similar weather patterns or sun exposures (refer to "Thru The Green" December 1991 for typical examples of these zones).
- \* All sprinklers are operating properly.

After evaluating your system and correcting any layout or mechanical deficiencies you can use a series of relatively simple calculations to develop a more efficient irrigation programming schedule. To achieve the highest level of efficiency your program should account for the following factors:

- \* Precipitation rates of your sprinklers at the various irrigation zones on your course (expressed in inch hour).

- \* Seasonal weather patterns for your area.
- \* Actual or historic daily evapo-transpiration rates and estimated daily water requirements for your type of turf (expressed in inches).
- \* How much time you have available for irrigation each day.
- \* At what degree of efficiency is your system providing water to your turf area (expressed as a percentage of perfection).
- \* How deep is the root zone of your turf and how quickly does your soil accept water.

In the next few months "Thru The Green" will analyze each of these programming factors in more depth.

These programming concepts are dealt with thoroughly in the California Department of Water Resources' "Landscape Water Management Program". This educational program is designed as a two-day seminar format. Upon completion of the seminar sessions, a test is offered to those who desire to become state certified as a Landscape Irrigation Auditor. Anyone interested in this program can call (800) 287-5310 for more information.

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