

THINKING OUTSIDE THE BOX

SPORTS TURF MANAGER GUEST EDITORIAL BY R.W. SHEARD, PH.D., P.AG.

At a recent workshop sponsored by the Sports Turf Association on the impact of water use bylaws on sports field management, a factor which received little discussion was TIME. As a result of such a bylaw, the turf manager is faced with three restrictions due to time.

First, he must accommodate the permitting of games in the evening which rules out irrigation during that time. Second, he may often only run a few stations at a time because the water service provided to the field does not provide the volume of water required to irrigate the entire field at one time. Third, union contracts may require extra costs due to supervision of the system outside normal working hours.

An additional factor for consideration is the SOIL in the rooting zone which has

a time component. Some soils, particularly the sand based systems, require more frequent irrigation; possibly every second day under high evapotranspiration. This is due to the relatively low amount of plant available water held in the root zone. In contrast, a silt loam root zone may require only a weekly irrigation.

Because of TIME, the water restrictions based on calendar date and clock time, as illustrated in the box, can severely limit the ability of the sports turf manager to maintain a quality turf surface.

An alternative is the allocation of the required total volume of water to the turf manager on a seasonal basis for the use of water on all irrigated fields under his jurisdiction. This alternative places the control of the day by day management of water, an essential element in the management of turf, with the sports turf manager.

By-law Number (2003)-17106. A By-law to prescribe outside water use restrictions within the City of Guelph.

DEFINITIONS

Program Level One. Program Level One shall be in accordance with the guidelines set out in the OLWRP Level One, or when the Water Storage Capacity is less than or equal to 75% but greater than 65%.

Program Level Two. Program Level two shall be in accordance with the guidelines set out in the OLWRP Level Two, or when the Water Storage Capacity is less than or equal to 65% but greater than 55%.

Program Level Three. Program Level Three shall be in accordance with the guidelines set out in the OLWRP Level Three, or when the Water Storage Capacity is less than or equal to 55%.

Sports Field. Means a grassed playing area designed, equipped and used exclusively for the conducting of organized, multi-player sporting events and practices.

RESTRICTIONS

Program Level Two

17.(1) During Program Level two, no person shall water any Sports Field ... except in accordance with the following:

- (a) Sports Fields or plants on the premises of even-numbered municipal addresses may be watered between the hours of 7:00 a.m. and 9:00 a.m. and between the hours of 7:00 p.m. and 9:00 p.m. only on even numbered calendar days: and
- (b) Sports Fields or plants on the premises of odd-numbered municipal addressee may be watered between the hours of 7:00 a.m. and 9:00 a.m. and between the hours of 7:00 p.m. and 9:00 p.m. only on odd numbered calendar days.

Program Level Three

19.(1) During Program Level Three, no person shall (a) water any lawn or boulevard or sports field at any time, using any means whatsoever....

Two steps are required in this procedure. The first is to meter the water service to each field as is done for the water service to each household.

The second is an estimate of the irrigation requirement for each field for an entire season. This step would require an estimate of the long term water deficit [long term rainfall less evapotranspiration] for the months of May through September for the geographic area. The long term water deficit for various regions in Ontario is available, including an estimate of the risk of a drought of various magnitudes, in the following publication (Brown, D.M., A. Bootsma and R. De Jong. *Analysis of Growing Season Water Deficits in Ontario*. Univ. of Guelph LRS Technical Memo. 98-1).

When combined with the total square area in metres of irrigated sports field turf in the jurisdiction, an estimate of the total volume of supplemental water for the growing season can be obtained. This volume of water is then assigned to the sports turf manager for use at his discretion at any time during the season. The water meters allow the jurisdiction in turn to monitor the assigned use and issue any penalties it may feel warranted to apply for misuse.

The turf manager would be entitled to irrigate after 9 p.m. or before 7 a.m., and at any time of the day if he is in an overseeding program. He would not be restricted to the date on the calendar so that an entire field could be irrigated on the same day. High demand sand root zone fields would not be placed in jeopardy due to water stress.

The turf manager may decide he must use his allotment of water to prevent the loss of the turf on a field with a sand base and allow a field on natural soil to go dormant even though it can expose that field to damage if play is permitted to continue.

While this system provides the sports turf manager with a more realistic approach to the use of water as a management tool, it requires significant knowledge on his part. He must be familiar with the water needs of turf, water relations in soil on each of his fields, weather forecasting and the most up-to-date irrigation controllers and delivery systems.

The days of setting the controller in May and complaining about water restrictions are over. ♦