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*Jacques Gosselin*  
President

## SPORTS TURF MANAGER

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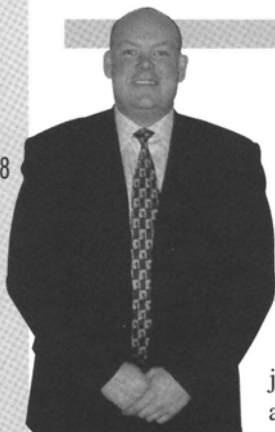


### STA OFFICE HOURS

Lee Huether is in the office from 9:00 a.m. to 2:00 p.m. Tuesday through Friday. The office phone number is (519) 763-9431. At other times, a message may be left on the voice mail system. Please include the vital information of name, telephone number with area code, and time of calling. The office may be reached at any time by faxing (519) 766-1704 or via e-mail.

# The President's Desk

PAUL TURNER



## Happy Growing!

A warm spring welcome to our membership. As I write this, it finally looks like summer is just around the corner and I hear it's supposed to be a hot, wet one. I most certainly will not complain. This was a long, cold, snowy winter but I guess the reality is that we live in Canada not the Bahamas!

Greening grass is a sign that it's time to renew your STA membership. It was necessary to increase annual fees slightly for the 2003 season, but I think you would agree that the membership still represents great value for the price. The new updated roster is being compiled based on information provided with membership renewals and will be mailed upon its completion.

### STA Web Site

To all our members who are using the web site, we say a big thank you and to any potential advertiser who may be interested in purchasing a banner ad, there are still great marketing opportunities available at very reasonable rates. The newly developed site is garnering an unbelievable amount of visits and we will continue to enhance the site to make it fun and resourceful for you our membership and for any visitors. We are looking at the possibility of adding a job board so if your municipality or organization is looking to fill some vacancies, please give Lee a call for an update. There will be a nominal charge for this service but given that our site caters to the key turf professionals in our industry, it may be money well spent.

### Annual Field Day

The plans for this year's field day are proceeding well. We are extremely excited to announce that our venue will be held at the University of Toronto, Scarborough

Campus. We thank Gord van Dyk and his staff for submitting an application to host this year's event. If you haven't been there before it is a scenic campus with lots of great rolling hills in the west end of Toronto, very close to Highway 401, with lots of parking. The date for this year's event is Wednesday, September 17<sup>th</sup>. Please mark it in your day planners to attend. We need a great attendance to keep this event rolling. We have lined up a good combination of speakers to discuss very relevant and functional topics.

---

Mark your calendars now for STA's popular Annual Field Day September 17<sup>th</sup> at the University of Toronto, Scarborough Campus.

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I would like to say thank you to Board Member Rick Lane for volunteering his time to speak at the Communities in Bloom National Awards & Symposium on Parks & Grounds, September 23 to 28, in Stratford, Ontario. See page 4 for details.

To all our members, I hope you had a great spring and the weather gods look kindly on us so we can grow some fine, lush turf this summer. ♦

## STA Scholarship Recipients

Congratulations on your hard work and achievement!

### Tennessee Propedo

Supervisor, Parks East  
City of Hamilton, Ontario  
*2003 Turf Managers' Short Course*

### Glen Kralka

Sault Ste. Marie, Ontario  
*2003 Ontario Diploma in Horticulture (Turf Option)*



# News Clippings

COMMUNITIES IN BLOOM • IPM PROJECT AT THE GTI IN GUELPH

**T**he Sports Turf Association, as a partner in Communities in Bloom, is participating in the National Awards & Symposium on Parks & Grounds from September 23 to 28 in Stratford, Ontario. Rick Lane, Manager of Leisure Services for Haldimand County and STA Director, will be presenting *A Grass Roots IPM Program for Sports Fields*.

As communities become more aware, more concerned and desire more input in the care and control of their environment, municipalities have to answer some tough questions. Whether the driving force is political or ecological, the debate will take



place and resolutions will be reached. Where does quality turf fit in? Through proper turf management techniques, you can give the grass a fighting chance against weeds and insects. For more information on this year's national symposium, visit [www.communitiesinbloom.ca](http://www.communitiesinbloom.ca).

## IPM Demonstration Project

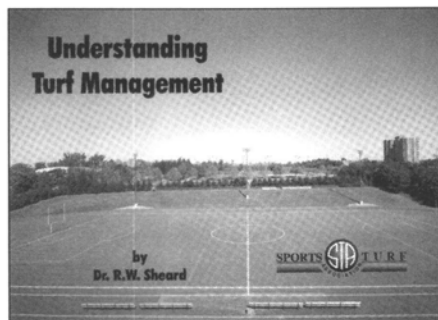
The Guelph Turfgrass Institute has received funding from the Ontario Pesticide Advisory Committee to conduct an integrated pest management (IPM) demonstration project for educational purposes.

The project will demonstrate lawn maintenance under three regimes: conventional management with seasonally timed pesticide applications, an IPM regime, and pesticide free management. Superimposed will be two heights of mowing as well as irrigation or no irrigation. The demonstration plots will be established at the GTI and in two other southern Ontario municipalities.

We will be including updates over the season from all sites through *The GTI Advisor* and on our website. Information from the project will also be distributed to Ontario municipalities and will provide a template for additional demonstration projects in the future.

The project is being coordinated by GTI Research Associate Erica Gunn with technical support from OMAF Turfgrass Specialist Pam Charbonneau. Mark your calendar to attend the Summer Research Field Day on August 19th to see this and other projects being conducted at the GTI.

*The GTI Advisor* is produced by the Guelph Turfgrass Institute (<http://gti.uoguelph.ca>) and is available free on the website or by sending an e-mail to [advisor@gti.uoguelph.ca](mailto:advisor@gti.uoguelph.ca) indicating you wish to subscribe.



## Understanding Turf Management by Dr. Sheard

*Available from the STA*

A practical manual for the management of safer, natural turf facilities for outdoor sports. The concepts are applicable for any turf manager, from golf course superintendents to the parks supervisor, whether maintaining golf greens, sports fields or race tracks for thoroughbreds. To order, call 519-763-9431 or visit [www.sportsturfassociation.com](http://www.sportsturfassociation.com).

## Odds and Ends

### Turf Agriphone

The Turf Agriphone is up and running. There are three options for accessing this information:

- 1) Call 1-888-290-4441
- 2) Call 519-824-4120 (x52597) to subscribe to the free email version
- 3) Go to the OMAF web site to see the weekly messages at <http://www.omafr.gov.on.ca/scripts/english/crops/agriphone/index.asp#Turfgrass%20Management>

### Quotes of the Month

A perfect summer day is when the sun is shining, the breeze is blowing, the birds are singing, and the lawn mower is broken.

*James Dent*

Ah, summer, what power you have to make us suffer and like it.

*Russel Baker*

### Membership Plaques

Now available! STA Display Membership Plaque in executive engraved walnut. Just \$50 plus S&H. Contact Lee Huether at the STA office to order.

### Autumn 2003 Submissions

If you have something you'd like to submit for the next issue, please forward it to the STA office by July 11, 2003.

### Editorial Content

Opinions expressed in articles published in *Sports Turf Manager* are those of the author and not necessarily those of the STA, unless otherwise indicated.

### Voice Your Opinion!

We appreciate all member feedback. To make this process easier, we have a form on our website, [www.sportsturfassociation.com](http://www.sportsturfassociation.com), under the "newsletter" link called *Feedback*. Check it out!

# Coming Events

CHECK OUT [WWW.SPORTSTURFASSOCIATION.COM](http://WWW.SPORTSTURFASSOCIATION.COM) FOR UPDATES...

## July 22-25

*Turfgrass Producers International  
Summer Convention & Field Days*  
Bellbrook, Ohio  
Information: (847) 705-9898  
[www.TurfGrassSod.org](http://www.TurfGrassSod.org)

## August 12

*Ontario Turfgrass Research Foundation  
Fundraising Golf Tournament*  
Copper Creek Golf Club  
Kleinburg, ON

## August 19

*Guelph Turfgrass Institute  
Annual Summer Research Field Day*  
Guelph, ON  
Information: (519) 824-4120 x52501

## September 17

*Sports Turf Association  
Annual Field Day*  
University of Toronto  
Scarborough, ON  
Information: (519) 763-9431  
[www.sportsturfassociation.com](http://www.sportsturfassociation.com)

## September 21-24

*Ontario Parks Association  
Annual General Meeting*  
Stratford, ON  
Information: (905) 524-3535  
[opa@opassoc.on.ca](mailto:opa@opassoc.on.ca)

## September 23-28

*Communities in Bloom National  
Awards & Symposium on  
Parks & Grounds*  
Stratford, ON  
Information: (519) 271-0250 x241  
[www.communitiesinbloom.ca](http://www.communitiesinbloom.ca)

## October 22-23

*Landscape Ontario  
Garden Expo, Toronto, ON*  
Information: (905) 875-1805  
[www.landscapeontario.com](http://www.landscapeontario.com)

## January 6-8, 2004

*Ontario Golf Course Management  
Conference and Trade Show*  
Toronto, ON  
Information: (905) 602-8873 x 222

## January 13-15

*Landscape Ontario Congress*  
Toronto, ON  
Information: (905) 875-1805  
[www.locongress.com](http://www.locongress.com)

## January 20 - 21

*Ontario Turfgrass Symposium*  
Toronto, ON  
Information: (519) 767-5000  
[www.open.uoguelph.ca/ots](http://www.open.uoguelph.ca/ots)

## February 19-21

*Turfgrass Producers  
International Midwinter Conference  
and Exhibition*  
Santa Barbara, California  
Information: (847) 705-9898  
[www.TurfGrassSod.org](http://www.TurfGrassSod.org)

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# Sports Field Aerification: Can you afford *not* to do it?

DALE GETZ, CSFM, THE TORO COMPANY

Aerify, aerify, aerify and when you're done, aerify some more. This is the mantra we've heard for the last 20 years and longer. But what does aerification really do for the turf and for the soil? How does it help sports turf? Is there a "best" method? Is there a "best time" to aerify? Can I afford aerification? Can I afford not to aerify? These are the questions I hope to answer.

**A**erification is one of the most important cultural activities you can do for turfgrass management and sports turf in particular. Let's look at what we are really asked to do for the sake of sports and how aerification can help. You, as sports turf managers, have to take care of a living, breathing (respiring), growing entity that is 35 times shorter than a six foot human and hundreds of times lighter than a 200 pound human and make it not only survive, but thrive, while being played on, tromped on, overused and abused in many ways.

We want our sports fields to play safely, look great and perform well under a variety of environmental conditions. If you can do all of the previously mentioned under these conditions, you are a genius. Before you get too disappointed and depressed, however, there are some answers, some techniques you can use to help you win the battle. While I can't address all the issues in this article, we can address one of the most important – aerification.

## Aerification Basics

What does aerification really do? Essentially, aerification breaks up soil aggregates that have become severely compacted. Aggregates are soil particles that have adhered forming larger clumps or peds. A well-aggregated loamy soil, for example, will consist of 50% pore space and 50% solids. Through compaction, successive periods of wetting and drying and the chemical processes of soil particles, these aggregates become harder and denser, limiting the ability of water and roots to penetrate them and extract needed nutrients. These compacted aggregates

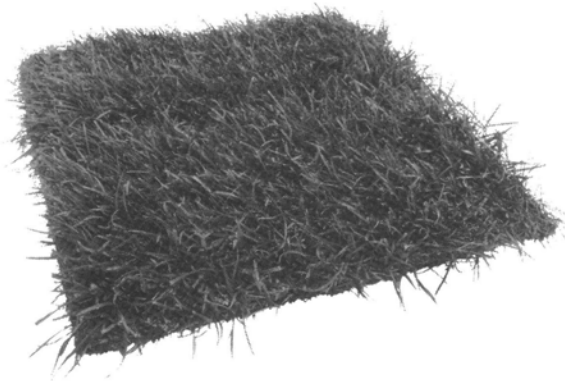
also hinder the ability of the roots to penetrate deeper into the soil where adequate nutrients and moisture may exist. So what does aerification really do?

- Relieves compaction
- Improves water infiltration
- Promotes deeper rooting
- Improves nutrient availability & uptake
- Improves toxic gas exchange
- Improves drying of the soil

Aerification also has additional benefits related to the overall health of the turf. Aerifying can be used to modify the root zone soils. By picking up or harvesting the cores during core aerification and then topdressing with a coarser material such as sand or a sand/peat mixture, you can improve the texture of the root zone soil so it is not as prone to compaction in the first place. Aerifying and topdressing or dragging in the cores can help control the thatch layer. Finally, aerification can provide one of the best seedbeds for overseeding purposes.

## Impediments to a Solid Plan

With all the advantages of aerification for the development of healthy turfgrass, it's hard to imagine someone not having an aggressive aerification plan. But what about the disadvantages – there actually are some. The biggest, of



course, is the cost. The cost of equipment purchases, labour and time. But don't let this deter you. Equipment can be purchased, leased or rented, or the entire service can be contracted. Aerification is such an important practice it cannot be ignored if you want to have healthy turfgrass. Another disadvantage is that aerification can bring weed seeds to the surface and promote their germination. Finally, if done at the wrong time of the year, aerification can cause desiccation to the turfgrass around the hole and cause surface disruption which could impede play.

Sports turf management presents unique challenges in that most sports are played more intensively in pockets or concentrated areas of the field. For example,



in baseball the area in front of the pitcher's mound and the outfield position locations get more use. In football, it's the area between the hash marks and the sidelines that gets the most concentrated use and in soccer and lacrosse, it's the goal mouth. This is both a blessing and a curse. A curse is the fact that: 1) These areas are super compacted, 2) They cannot be moved from week to week in most cases, and, 3) They are overused so finding time to promote good turf growth is limited.

The blessing is that these areas are relatively small in size so what may seem like a daunting task can actually take less time and budget dollars to complete than originally anticipated. In other words, you can concentrate your efforts on the areas that need your attention the most.

### **Aerification Methods**

Core aerification is the process by which actual cores or plugs of turf and soil are pulled up and brought to the surface. This is by far the most beneficial type of aerification for the turf. By doing this you actually decrease the bulk density of the soil. You can then drag or break up the cores allowing the soil to refill the holes in a less compacted state. You can also pick up the cores and topdress with sand (masonry sand works very well for this and is readily available but it is wise to have your soil and sand tested to determine compatibility).

The downside to core aerification is the surface disruption and the time it takes for dragging, topdressing and cleaning up but, once again, concentrating on small areas can go relatively quickly. Also, choosing smaller tine sizes can minimize the disruption; however, it will also minimize the beneficial effects you are trying to achieve. The other downside is that the surface disruption can affect play and surface stability, especially in sand based soils, so timing is very critical. Do not core aerify within two weeks of major events on your field. This will give time for the turfgrass to heal and the surface to stabilize.

Solid tine aerification simply pokes holes into the soil. This can be beneficial when there is a need to aerify during the playing season. For example, you may want to aerify after a game or event that has been played in wet conditions and you

need to loosen the surface to aid in gas exchange or water infiltration (be sure to allow time for the soil to adequately dry before aerifying). The surface disruption is much less and there is no need to clean up with solid tines. Solid tines are available in many different sizes depending upon the situation at hand. One caution, though, is that because you don't actually remove cores from the soil, repeated solid tine aerification can cause compaction at the hole depth and some evidence even suggests that glazing of the sides of the holes can inhibit water infiltration, particularly when soil moisture is high.

Water injection aerification is another valuable tool at your disposal. In this method, water is injected into the soil at 600 mph (5,000 psi). Each burst of water leaves a surface hole of less than 1/4" but can affect up to a 3" diameter of soil below the surface. Water injection aerification causes virtually no surface disruption and can even be used prior to sporting events. Water injection is used

adequate job in large open areas where the soil is not too compacted but several passes may be needed to get the spacing you want. Depth of aerification is highly dependent on soil moisture and type. Also, since the tines are mounted on a drum or roller, they have a tendency to tear the turf and disrupt the soil much more than other types.

Reciprocating aerifiers are designed so the tine enters the soil vertically. This leaves a much cleaner hole and the down pressure guarantees a uniform depth. Reciprocating aerifiers come in many sizes from walking units to large 80-inch units pulled behind tractors. Reciprocating units have a wide variety of tine sizes; some are designed to aerify as deep as 12". Walking reciprocating aerifiers do an excellent job on the smaller areas discussed earlier. They are very maneuverable, relatively inexpensive, have many tine options and are self-contained so you don't need another piece of equipment to pull them with.

Finally, there are drill type aerifiers that



Sports turf management presents unique challenges in that most sports are played more intensively in pockets or concentrated areas of the field.

quite extensively in the southern portions of the United States to alleviate localized dry spots or hydrophobic soils. When managing cool season turfgrasses, water injection aerification is an excellent way to aerify during the summer months when other types of aerification may damage your turf.

### **Aerification Equipment**

There is a plethora of aerification equipment on the market today. The type you choose will depend upon what you want to accomplish, how much ground you need to aerify, what your budget will withstand and what your current soil and turfgrass conditions are today.

Drum or towing type aerifiers are relatively inexpensive and cover a large amount of ground in a short period of time. They are available in either a pull type or three-point hitch mounted. They do an

use carbide tipped bits to drill a hole into the soil up to 12" deep and 1" in diameter. There are even attachments that can automatically fill the holes with topdressing material after they have been drilled. Drill type aerifiers are very expensive but there are many companies that provide this service on a contract basis.

### **Aerification Timing**

Proper timing of aerification is important to achieve the desired results. I will address timing both in terms of the weather and in terms of which sport is played on the field. Obviously weather plays an important part in the quality of aerification. Aerifying during periods of heat and/or drought stress can negatively impact your results, especially with cool season turfgrasses. You will further stress the turf and recovery can take longer. There is also a chance of turfgrass desic-



cation around each hole. This does not mean you can not or should not aerify in the summer but it does mean you should monitor the weather closely and if you see a period when weather conditions improve, plan your aerification. You should also consider using smaller tines. Periods of drought or heat stress are also a good time to consider water injection aerification.

Late fall or early winter can also present aerification challenges. Leaving open holes can cause turf desiccation around them. On the other hand, if you drag in the cores and/or topdress, the desiccation is minimized and subsequent freeze and thaw cycles of winter can actually help loosen the soil further. Late fall aerification is often performed on football fields after the season has ended because any desiccation that may occur over winter will heal prior to the next season.

Soil moisture also plays a part in determining when to aerify. The soil should be moderately wet but not at full field capacity. If it is too wet, the cores will not break up easily and more glazing can occur. On the other hand, if the soil is too dry, the cores will break up easier but hole depth may vary and the turfgrass around the hole will be more prone to desiccation. Experience with your own soil types will be your best teacher.

Scheduling aerification with regard to sports or events on your sports fields is another challenge. For those of you fortunate enough to have separate fields for each different sport this issue is much easier. For those managing multiple-use fields, finding a time to aerify can be extremely challenging.

In general, aerifying immediately after the season or after periods of heavy use is

the best. For football and soccer, this means late fall in most parts of the country. For the spring sports of baseball and softball, this means late spring. If you have special events such as concerts, picnics or large tournaments on your fields, aerifying immediately afterward is also helpful.

Finally, with regard to timing, how many times should you aerify? This is the thousand-dollar question. Once is better than not at all. Twice is better than once and so on. Remember, however, it is not uncommon to aerify the worst areas of a sports field five or six times each year.

### Aerification Strategy

Commit to a three-year aerification program to achieve maximum results. This program should be well thought out and in writing. Write a separate plan for each of your sport fields. Consider game and practice schedules (as well as when the preferred time to aerify would be) and what areas of the field you want to aerify.

Following is an aerification plan for a typical high school football field. The field is cool season turfgrass used for 18 home games and some practices in the fall and practices in the spring and late summer.

- *November (after last game)*  
Aerify entire field, drag cores, seed, topdress and fertilize
- *Late April (after spring practice)*  
Aerify entire field, drag cores, seed, topdress and fertilize
- *Mid May*  
Aerify between hash marks, sidelines and painted end zones, drag cores, topdress

- *Early to Mid June*  
Aerify only bad areas, drag cores, topdress
- *Early July (weather permitting)*  
Aerify only bad areas, drag cores, topdress

### Can I or Can I Not Afford to Aerify?

I firmly believe you can not afford not to aerify. It is such a powerful tool in your arsenal of weapons against field use and abuse that aerification must be a part of your overall turf management strategy. Be creative, though. If you have to rent an aerifier, do only the necessary areas. Many golf courses are willing to let schools borrow equipment because their children may go to school there. Contracting aerification services is a way to get aerification done without owning equipment.

Develop a plan of action to improve your sports fields with aerification and take that plan through the budgeting process to obtain equipment dollars. Above all, strive to make your sports fields better and safer through active turfgrass management. ♦

— Reprinted with the permission of the National Federation of State High School Associations

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**SEEDS**

# Reducing Peak Water Use in Guelph

PETER BUSATTO, MARTIN LAVICTOIRE, CHARLENE PINKSEN & JAMES ETIENNE, CITY OF GUELPH

The challenge faced by municipal water providers during a drought involves the balancing of peak water demand with water supply capacity, while at the same time complying with related provincial legislation. In response to drought conditions in the late 1990s, the Province of Ontario enacted the Ontario Low Water Response Plan (OLWRP) in 2000. The OLWRP is triggered by local drought conditions and provides a tiered framework of voluntary and mandatory water use restrictions for major water users. The OLWRP was implemented in Ontario during the dry summers of 2001 and 2002.

Issues raised by Guelph's watering ban in 2001 and the directives of the OLWRP led Guelph Waterworks to re-evaluate the City's approach to managing outside water use and create a comprehensive Outside Water Use Program (OWUP) in 2002. The OWUP consists of colour coded levels of water use restrictions that correspond with levels defined in the OLWRP. The following is a brief summary outlining project development and implementation.

## The Guelph Water Supply

The City of Guelph, with a population of 110,000, is located within the Grand River watershed. Although two rivers – the Speed and the Eramosa – run through the city, Guelph relies wholly on groundwater as the source of municipal water supply. This supply consists of 23 groundwater wells, a shallow groundwater collector system, and an artificial recharge system drawing water from the Eramosa River. The collector and recharge systems and a number of wells draw water from shal-

lower aquifers. The capacity of these shallow aquifers is reduced by the lack of recharge that occurs during times of drought.

The water system rated capacity is 75,000 cubic metres per day; however, with quality degradation and the last six years of drought, effective capacity is approximately 63,000 cubic metres per day.

## The Recent Drought

Portions of the Grand River watershed have experienced severe drought over the last six years. These drought conditions are similar to those experienced in the 1930s. The precipitation deficit in the Guelph area is almost 500 millimetres. 2002 was the second consecutive year of historic low flows in the Speed and Eramosa Rivers. In 2002, levels in the Upper Speed and Eramosa Rivers met the Level III streamflow triggers of the OLWRP (Figure 1). These levels were

the lowest recorded since monitoring began in the 1960s.

## Customer Water Demand

Guelph average day water demand is approximately 54,000 cubic metres per day, with about half of this demand generated by residential customers. In the last few years, peak demand has reached 74,000 cubic metres per day prior to the implementation of watering bans. Without watering bans, and based on the experience of municipal neighbours, it is anticipated that peak demands might double average day demands.



## 2001 Response to the OLWRP

Guelph Waterworks currently holds 23 provincial Permits To Take Water. Most permits contain conditions allowing the province to reduce the amount of water taken during times of drought. Guelph received a provincial request to reduce water use by 20% in August 2001 and subse-

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quently implemented a lawn watering ban as part of the outside use program at the time (Alternate Day Lawn Watering with Time Restrictions). Although peak water use was reduced, municipal politicians and customers were dissatisfied with the implementation and enforcement of the ban.

### Demand Management

With continued drought driving an increase in customer outside water use, a solution was needed to help balance peak demand with available supply capacity. Guelph Waterworks believes peak demand management through a comprehensive OWUP is the solution. Although demand management programs have the potential to create customer discontent and lower water sales revenue, they are an effective, efficient, and environmentally sustainable means to match water demand with supply. Unlike past programs, the new OWUP would provide a long term, goal driven solution.

The following four goals were confirmed for the OWUP:

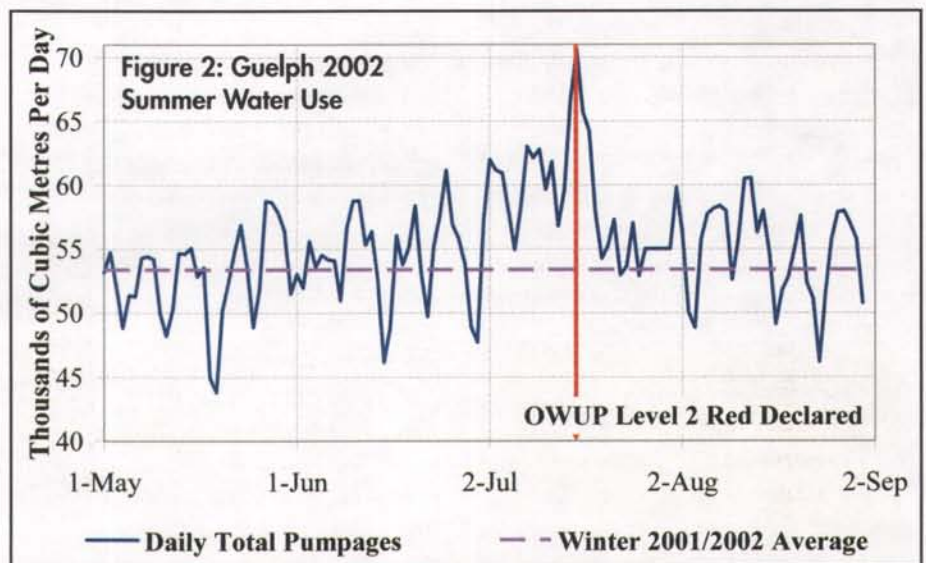
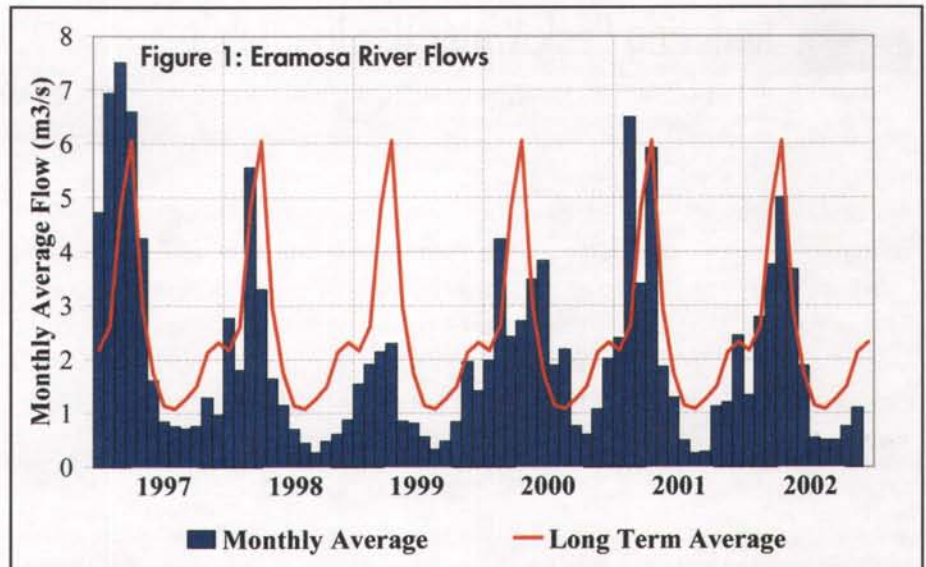
- Focus on non-essential water use;
- Support environmental sustainability through the OLWRP;
- Support program effectiveness, fairness, and practicality; and
- Minimize regulating commercially driven outside water use.

### Program Enforcement

The most controversial aspect of previous watering bans in Guelph was the lack of program enforcement. Some customers who voluntarily comply with watering bans will not tolerate the non-compliance of one of their neighbours. Lax enforcement of the program was perceived as part of the problem.

Under the enhanced OWUP and supporting by-law, customers can be charged for the following, most frequent water wasting activities:

- Over watering;
- Irrigating and needless washing of paved surfaces;
- Watering in the rain;
- Leaking ponds and fountains;
- Non-recirculation of fill water in pools and fountains; and
- Vehicle washing with a running hose.



### Program Success

In 2002, the OWUP was successful in reducing overall water use by more than 25% below historic peak levels and average day demands by 13% (Figure 2). The program kept over two hundred and fifty thousand cubic metres of groundwater in local groundwater aquifers; some of this water is buoying a stressed ecosystem and may be available for future municipal use. The OWUP also helped the City comply with a provincial requirement to reduce water use and avoid mandatory water use restrictions imposed under the OLWRP.

### Future Improvements

Any program with the customer impact and complexity of the OWUP is best improved on a gradual basis. Planned improvements to the 2003 program in-

clude the addition of the ability to ticket for program non-compliance, tighter regulation of bulk water sales, the investigation of peak period pricing, piloting of residential cisterns, and piloting the use of wastewater effluent for irrigation.

Future improvements may address encouraging the development of more efficient irrigation systems; the installation of low water use grass and plants; efficiencies in recreational water use including private swimming pools; and applying the OWUP to river and private well takings. ♦

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