The chart "Grey Water Design Requirements" details very simply the major items dealt with during the design/renovation phase, as well as over the next 15 years as Woodbine diligently worked to minimize the use of potable water on the racing surfaces in an environmentally acceptable manner.

When we look at the capacity the grey water system required for the new tracks and break it down into collection, storage and supply, we see that the basic infrastructure was already present. Collection was the most immediate issue required to handle the increased surface area that needed to be drained. The new 22-acre E.P. Taylor Turf Course was designed using a sand-growing medium similar to a USGA specification, but allowing for a firmer racing surface. Water drains vertically through the sand into a 4" gravel underlay with drain lines spaced every 20 feet. The drain lines were connected into new storm sewer lines or run into ditches that drain into existing catch basins.

Drain lines were placed under the thoroughbred dirt and standardbred traprock tracks to remove ground water. However, the oval shaped tracks rely on horizontal drainage and are sloped inward, moving rain water into ditches on the inside of each track. This meant new catch basins and storm sewer lines were required on the inside of the standardbred track to complement those already existing inside the thoroughbred track. Grassed ditches (which absorbed much of the runoff) were replaced with asphalt, increasing the amount of water captured and making future maintenance easier. A concrete ditch 5/16 of a mile long was built between the dirt track and the turf course in the front stretch area. This was designed to intercept surface water and the eroded track material it carried before it could flow onto the turf course. All storm lines were tied into the existing collection line running north into the Rexdale retention pond.

Racing surface materials are in constant need of replenishment. Large amounts of the sandy racing cushion are carried into the ditches by rainfall runoff and by maintenance procedures that pull steel plates over the surface to squeeze water out of the track after a rainfall. To prepare the standardbred track for winter racing, snow and wet traprock are graded off the racing surface, pushing the material into the outer ditch. This excess material fills ditches and catch basins and plugs storm sewer lines.

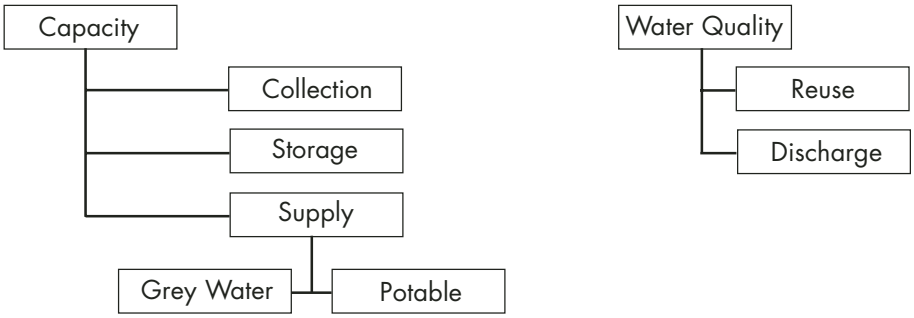
To maintain the integrity of the collection system all-year round, regular maintenance is required. Snow is graded off and trucked away as often as necessary. Every spring, the ditch is cleaned out with a backhoe or gradall. The large amounts of snow this past winter required excavators to remove all snow and frozen traprock from the ditches to prevent snow melt from flowing back onto the racing surface. Material removed from the track is recycled. Once the material is dry, it is screened, and if suitable, put back onto the track. If the consistency is not adequate, the material is then used on horse roads or as stall fill.

The stable area of about 40 barns is a major collection area. Most of the rainfall is collected from the stable rooftops, roads and a few asphalt parking lots. It is then directed into concrete gutters in the ditches that flow into catch basins on the storm sewer lines. The remaining areas are grass or gravel parking lots. Up to 2,200 horses stable at Woodbine from mid-February to early December. Each barn has outdoor wash areas for the horses. Approximately 75% of the horses will train or race each day. In warmer weather those horses would then be bathed or hosed off. At about 40 L per horse, this represents a significant amount of water to recapture in the grey water system.

The stable area comes with its own set of problems. The stable shed rows and horse roads are a mix of clay, sand and limestone. Horses track the material in their hooves everywhere they walk. Much


TRACK MAINTENANCE

GREY WATER DESIGN REQUIREMENTS



SETTLING PONDS

of it gets washed off the roads into the ditches and catch basins. Being an agricultural facility, manure collection and handling is a daily issue. Good handling prevents manure being washed into the storm water. Horse people are encouraged to use non-phosphate detergents/soaps to bathe the horses and wash equipment.

As a responsible corporate business, WEG's goal is to manage the grey water system so that it provides water of acceptable quality for reuse on the racing surfaces. In addition, the company needs to ensure that overflow from the Rexdale retention pond meets guidelines set by and monitored by the Ministry of the Environment. In the mid 1990s, WEG proceeded with a three-step plan to raise water quality standards. The first step was to upgrade the manure collection/transfer site. A new 150' x 150' concrete pad was built with catch basins drained into the sanitary sewer system. The site was birmed on four sides, with only the entrance and exit open. All on-site manure bins are emptied daily and the manure transferred to the collection site for removal. The second step was an ongoing stable improvement program to rebuild concrete wash pads and gutters at each barn. The third step was to make the horse people stabling horses on-site aware of environmental issues. All racing stables are independent businesses represented by their association – the Horsemen's Benevolent and Protective Association (HBPA). WEG in cooperation with the HBPA, encouraged members to switch to environmentally friendly soaps, clean up around the manure bins to reduce runoff, and ensure all hoses had working nozzles to eliminate waste of potable water.

After analysis, the benefits are positive and can be improved. There is better overall concern for the environmental issues involved. The wasting of potable water has declined. Contamination of grey water from poor housekeeping practices has definitely been reduced.

Based on this positive information, WEG decided to invest in two major initiatives to further improve grey water quality for on-site use and discharge, and to increase its storage capacity.

Stable Area Storm Water Diversion/ Settling and Storage System

Most of the water quality issues originate with the stable grey water. The first initiative was to divert this water into holding ponds and give it time to settle out the contaminants. To do this, a section was cut out of the four-foot storm waterline where it exits the stable area and replaced with a section of sewer pipe in the shape of a Y, placed so that all flow is diverted into a new underground pumping station. Only an extreme storm can push water over the bypass into the original storm line. Once in the pumping station two 20 hp pumps move the daily flow and moderate rains into two sewer lines pushing the water another 1/8 of a mile into three settling

chambers. In the event of heavy flow, two 40 hp pumps take over to move the water. Sediment in the pumping station is removed with a vacuum truck every six weeks and the settling chambers on an annual basis. From the settling chambers the water is pushed under the turf course into a new settling pond, (capacity 6.2 mil. gal.), the first of four ponds in series. As the water level builds to capacity in the first pond, it will overflow into pipes running under the dirt and standard bred tracks into pond 2 in the track infield. This in turn overflows into the 3rd or middle pond. If there is demand to irrigate, water is gravity fed into the pumping pond. If there is no demand, water will over flow from pond 3 into the main storm sewer line and drain into the Rexdale retention pond. At the same time, grey water in the retention pond is recycled back to the harrow yard, filling water trucks that will spray it on the dirt and traprock tracks, horse roads and stable roads and to water the non-irrigated flower beds around the property.

The step-by-step procedure to bring water across the ponds to the irrigation ponds allows for a number of settling stages and increases the dilution factor of any contaminants. In the last two years, all irrigation water for the E.P. Taylor turf course has come from this supply system. With heavier irrigation demands over the last two years, overflow from the retention pond has been reduced. More importantly, the quality of the grey water discharged has improved to an acceptable level.

Rexdale Retention Pond Cleanout

The second initiative was to clean out the Rexdale retention pond. This had been a collection site for 50 years. It was estimated to be half-full of track sand, limestone, clay and silt.

The project was undertaken between January and April of 2007. The water under the ice was pumped from the pond. The ice was pushed to the side and the sediment pumped up into agricultural tankers or excavated into heavy haul dump trucks. The material was tested and found to be acceptable to dump on-site. A new recovery pond was incorporated into the design of the pond, with clay being transported from the dumping site to build the walls of the recovery pond.

The pond reclamation created 7.5 mil. gallons of storage capacity. This resulted in cleaner water and meant less wear on the pumps, less clogging of nozzles in the water trucks, and has noticeably reduced the odour when applied. As a result, no potable water was used from May 1 to Nov. 1, 2007 for application on any of the tracks, dust control or watering of non-irrigated flower beds while the grey water system was in operation.

The Move to Polytrack

In the summer of 2006, Woodbine converted the main dirt racetrack from a sandy loam racing cushion to an all-weather poly track. While this was a major commitment to racing, and was done with a view to improve the consistency and safety of the racing surface for thoroughbreds, the indirect benefits to grey water quality and usage rates were significant.

Polytrack is a mixture of silica sand, carpet fibre, jelly cable and rubber crumbs all tumbled together in a vat and coated with hot wax. The construction design is very much like the turf course. Water drains vertically through the poly, continues through a layer of macadam (porous asphalt) into a drainage layer of clean stone. The material does not wash out like sand and with vertical drainage through to the tile lines, there is no erosion of sand into the ditches and sewer lines resulting in cleaner grey water. Poly does not require water to maintain its structure, therefore water usage on the thoroughbred racing surface has practically been eliminated.

Dealing With Salt

Since 1994, Woodbine has been open for live or simulcast racing each winter. In 2000, the OLG opened their slots casino at Woodbine and is now open 24/7. The increase in patron traffic and the desire to remove slip and fall hazards has increased the use of salt. Naturally the result has been an increase in salt concentrations in the grey water. With less rainfall during the main growing season, irrigating with grey water has a less than optimal impact on the turf. Presently, gypsum is applied twice a year to help neutralize the salt concentrations.

The Future of Grey Water Use at Woodbine Racetrack

Certainly salt will continue to be an issue. The level of service expected at a gaming-entertainment destination dictates that the fastest method to ensure slip-free walkways and roads be utilized. Certainly better methods of removing snow and effective alternatives to salt need to be considered. Treatment of irrigation water prior to application is a definite possibility.

Expansion of the grey water system to supply irrigation water to the turf training course's rain fed pond, located at the south end of the property, is under review. Additional pond reclamation projects remain under consideration.

Woodbine's goal is to manage the grey water system so that it provides water of acceptable quality for reuse on the racing surfaces. In addition, the company needs to ensure that overflow from the Rexdale retention pond meets Ministry of the Environment quidelines.

The most anticipated development is Woodbine Live, adding a hotel, shopping, dining, entertainment, residential and business areas to the racing and casino facilities. Rainwater recovery will be very important and investment at this scale opens up the possibilities for the design of innovative recovery systems to capture salt-free water from roof tops, store it and use it for irrigating green space and gardens within the development. Similarly, methods to collect, store and treat grey water to acceptable quality standards need to be explored. These will allow for recycling within the public areas of the new development.

The original design of the grey water system at Woodbine is the foundation for the expansion and development that has taken place over the last 15 years. Woodbine's use of this resource will be increasingly important in the coming years as environmental and economic realities demonstrate the benefits of effective grey water use. ♦

MAKING THE MOVE TO GREY WATER IN BURLINGTON

OTS HIGHLIGHT ARTICLE • TOM BRAIN, SUPERINTENDENT • BURLINGTON GOLF & COUNTRY CLUB

The use of grey water at Burlington Golf & Country Club was predicated by the need for a new maintenance building. We had simply outgrown our existing building and there were a number of health, safety and staff issues that needed to be addressed, along with equipment storage space requirements. Planning for the new building was a long, intricate process taking almost ten years. Approval for the project was received in 2004, with construction set to begin in December 2005. The new facility afforded us the opportunity to incorporate some up-to-date design concepts and environmental initiatives.

Due to the proximity of Falcon Creek and the steep ravine, we had very little space to work with in order to place the new building. A number of alternate locations on the property were investigated. However, none were suitable without interfering with the golf course or neighbouring properties. Eventually, permission was granted by the Halton Conservation Authority and the City of Burlington to expand our maintenance building at the existing site.

While preferable in terms of aesthetics and access to the property, the expanded building at the existing location would not leave much space for more than parking and vehicle traffic.

Designing the New Grey Water System

Our existing wash pad had been in place for approximately 30 years. It consisted of a 10 x 10 concrete pad with a grate and water supplied from irrigation water. All the wash water filtered through the grate and ran, essentially untreated, into Falcon Creek. Although we had always intended to incorporate a wash water treatment/recycling system into the design of the new facility to address our woefully inadequate wash pad, the question of the location of the wash pad became something of a challenge. We worked closely with John Glover, our sales representative from ESD Waste-2-Water during the design phase. ESD has many units operating in the United States, and a few operating in southern Ontario. Upon John's suggestion, the wash pad was located inside the building.

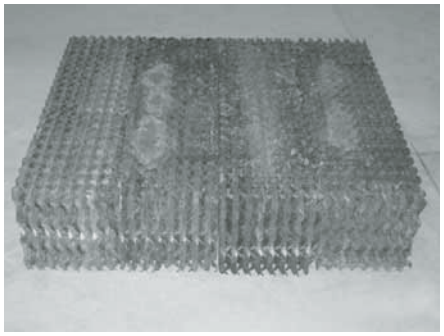
We had designed the building to maximize our access to equipment, and it only made sense to place the wash pad inside one of the two drive through entrances. Placing the system inside also had further benefits. One of the problems we had identified with outdoor systems was the tendency to overfill the system when it rained from water collecting on the wash pad. Having the wash pad under roof eliminated rainfall supercharging the system. Also, the system would be functional year round.

The main drawback was the potential for odour with the solid separator and the treatment unit itself. As it turned out, neither were issues. As long as the clipping cart is emptied regularly, odour is not an issue.

Use, Maintenance & Mechanics

The unit requires some minor daily maintenance, the addition of microbes weekly and some ongoing regular maintenance. Maintenance of the unit is the responsibility of our 2nd Assistant, Jeff Lockhart.

The system consists of a 20' x 20' wash pad with a main sump in the centre. There are two hoses on either side of the pad and the pad can accommodate two fairway mowers or two rough mowers at a time.

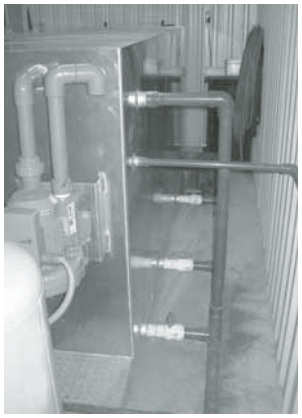


The wash water is pumped from the self cleaning sump to a solid separator. The clippings are separated out and collected in a draining wheel barrow and two additional chambers separate out fine particles.

The water is then pumped to the central unit which is housed in a separate heated room. The water is cycled through three aerated chambers and the unit is seeded weekly with microbes that feed on the organic and inorganic residues in the water. The microbes are shipped on a bi-monthly schedule from ESD in the U.S.

Plastic honeycomb type cores help the microbes to colonize the unit and increase the exposure of water to the microbes. The water works its way through the system and is then returned to the hoses, completing the cycle.

As I stated earlier, because the wash pad is under roof, our system never overfills, however some water is lost due to evaporation. The system uses a float valve to automatically top up when the water level gets low. A sump is also located in our mechanics work shop and is connected to the system with an air diaphragm pump for the occasional wash activities that take place in the shop.



Also installed at the time of construction was a wash and spill containment system in the mix load area for our sprayer. The system allows us to reclaim any water or products spilt while filling the sprayer or in the event of a serious leak. Spillage is directed to a sump by a beveled floor, pumped to a holding tank, filtered and returned to the sprayer to be applied on the golf course. Use of the system has been limited to testing and maintenance, but it is nice to know it is in place, should a spill occur, to contain contaminated water and prevent potential discharge to the environment.

Preserving the Natural Environment

The adjacent Falcon Creek ravine is a wonderful land feature that runs through and defines our property and characterizes our golf course. We want to do everything we can to protect and enhance the ravine and the creek for generations to come.

We feel we have made some major advancements to protect our immediate environment, including those down stream, and to reduce our impact on the environment as a whole.

I would encourage those of you considering improvements to your equipment washing facilities to consider installing a wash water recycling system and say, "Yeah to Grey!" ♦

— Green is Beautiful, Ontario Golf Superintendents' Assoc'n, May 08

Articles Welcome!

Contact Lee Huether at the STA office if you are interested in contributing to the *Sports Turf Manager*. We appreciate feature-length articles, column ideas and newsworthy items.

SARRITOR GRANULAR BIOHERBICIDE

OTS HIGHLIGHT ARTICLE • DR. ALAN WATSON • MCGILL UNIVERSITY • ALANWATSON@MCGILL.CA

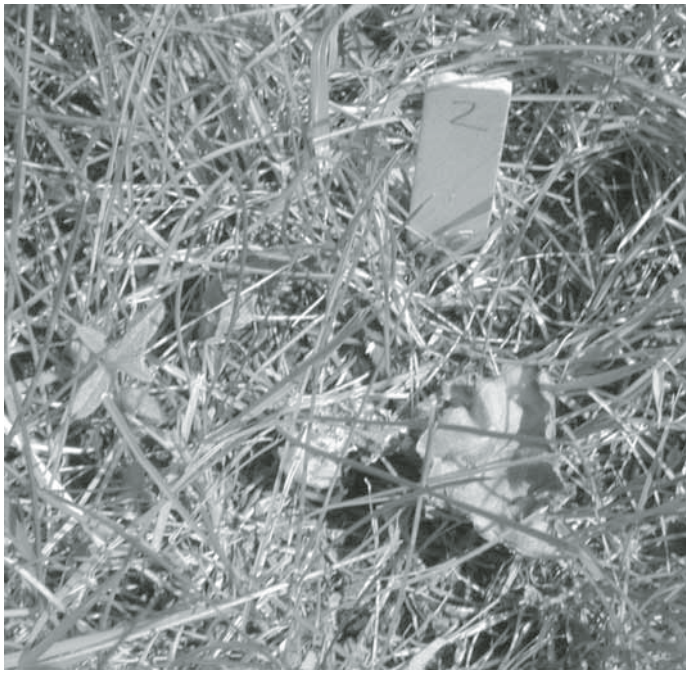
In the recent past, control of common dandelion and other broadleaf weeds in turfgrass has been readily achieved with phenoxy herbicides. The herbicide option has been revoked through municipal and provincial legislation across much of Canada, necessitating alternative approaches. Finally, there is an effective biological option. SARRITOR is the first bioherbicide developed for control of dandelion and other broadleaf weeds in turfgrass. SARRITOR granular bioherbicide has received temporary registration by Health Canada's Pest Management Regulatory Agency (PMRA) and is proceeding towards full registration. A limited amount of Sarritor was available for the 2008 season. Full production will not be achieved until 2009/10.

The active ingredient of SARRITOR is a naturally occurring fungal plant pathogen, *Sclerotinia minor* (IMI 344141). *Sclerotinia minor* is widespread in the environment, yet there are no published reports of disease associated with *Sclerotinia minor* in birds, wild mammals, earthworms, honeybees and other arthropods, aquatic invertebrates or fish. Many soil organisms, including nematodes, earthworms, mites, bacteria and fungi feed on or parasitize fungal sclerotia. Human and environmental toxicological studies have established that *S. minor* IMI 344141 is neither toxic nor pathogenic to non-target organisms. SARRITOR's active ingredient is not toxic or pathogenic to birds, honeybees and earthworms and SARRITOR granules have low dermal toxicity and are non- to minimally irritating to the skin and eyes.

The bioherbicide product is produced by growing the fungus on ground cereal grains followed by drying and vacuum packaging. The small (1.5-2.0 cm diameter) bioherbicide granules are broadcast or spot applied to weed infested turf in the spring and/or the autumn. To work, the fungus must grow out of the granules and invade and colonize dandelion and other broadleaf weeds. Favourable conditions for germination and infection are daytime high temperatures of 15-24ºC and rainfall or irrigation within 12 hours. The product should not be applied when temperatures are above 25ºC or during periods of dry weather. Disease develops quickly and complete kill of dandelion and other broadleaf weeds can be achieved within seven days, about twice as fast as the standard three-way chemical herbicide. The product is compatible with normal lawn maintenance operations such as mowing, fertilization and irrigation.

Foliar damage and dandelion mortality caused by SARRITOR are affected by plant age and the presence of grass competition. Dandelions of all ages are more severely affected by *S. minor* in the presence of grass competition. A healthy grass sward provides a microenvironment favouring the success of SARRITOR as a biological control agent of dandelion.

The active ingredient of SARRITOR is a naturally occurring fungal plant pathogen, *Sclerotinia minor*. It is widespread in the environment, yet there are no published reports of disease associated with the pathogen in birds, wild mammals, erathworms, honeybees and other arthropods, aquatic invertebrates or fish.



Thus proper management of the turfgrass environment is complementary to the efficacy of *S. minor* as a biocontrol for dandelion and other broadleaf weeds.

Most broadleaf plants are susceptible to infection with *Sclerotinia minor* strain IMI 344141 following broadcast or spot treatment with SARRITOR granules. SARRITOR destroys all above-ground plant foliage and reduces root biomass, but dandelions with large tap roots may resprout and need re-treating. Variation in damage amongst weed species is a reflection of different growth habit (upright vs. prostrate vs. creeping); leaf size, leaf orientation – all features that affect the degree of direct product contact onto plant stem and leaf surfaces. Plants with the rosette form of growth intercept more bioherbicide particles than do plants with upright growth habit. Less bioherbicide product achieves direct contact with upright plants. SARRITOR granules and *Sclerotinia minor* strain IMI 344141 do not persist in the environment and are not readily dispersed from the site of application. Mycelia of the fungus do not survive beyond 11 days in the turfgrass environment. Thus SARRITOR does not persist and has no residual activity, although SARRITOR will kill dandelion seeds that the fungus contacts on the soil surface. Turf grasses are not harmed by SARRITOR. Kentucky bluegrass, creeping red fescue, perennial ryegrass, annual ryegrass, creeping bentgrass, colonial bentgrass, chewing's fescue, tall fescue and hard fescue are resistant to infection following both pre- and post-emergent applications of SARRITOR. The risk to non-target plants is limited to those growing in or adjacent to treated turf. Users are advised to avoid direct application to desirable broadleaf species. ♦

Adjacent Page Left: Spring after 40g/m^2 SARRITOR in previous fall.

Adjacent Page Right: Spot application of 0.4g on bull thistle.

Above Left: Three days after spot application of 0.4g of SARRITOR on broadleaf plantain.

Above Right: Seven days after spot application of 0.4g of SARRITOR on broadleaf plantain.

TURNING UNUSED GREEN SPACE INTO THE 'ULTIMATE' FIELD

DUANE CHRIS • COMMUNICATIONS DIRECTOR • WATERLOO ORGANIZATION OF DISC SPORTS

The Waterloo Organization of Disc Sports (WODS) is an organization in its sixth year of promoting disc sports in Waterloo Region (Kitchener, Waterloo, Cambridge and surrounding areas). The primary activity enjoyed by its members is the game of Ultimate, sometimes called Ultimate Disc or Ultimate Frisbee, a fast-paced cross between soccer, basketball and rugby played with a flying disc on grass or turf fields.

Having been invented in the late 1960s, and only enjoying widespread recognition since the 1990s, Ultimate has faced an uphill battle in competing for field space against long-established sports like soccer and football. Worse, a regulation Ultimate field is slightly longer than a regulation soccer field, making it difficult to find appropriate, established and well-maintained playing locations. Goal posts and running tracks are further obstacles to a good game of Ultimate when played on most existing fields. While soccer players tend to want grass cut to a maximum height of two inches, Ultimate players prefer longer grass for greater padding on dives and slides. Indeed, these are dilemmas faced by Ultimate players and organizations across Canada and North America.

In Waterloo Region, WODS historically has operated its summer recreational Ultimate leagues on soccer and football fields scattered throughout the City of Kitchener. The ongoing quest for quality field space sparked an intensive search in 2007 with WODS members looking beyond traditional sports fields to consider alternative green spaces. An inquiry to the City of Kitchener regarding Kiwanis Park arrived at an opportune time, with the City looking to fulfil a new mandate to increase uses at that park. Several meetings and proposal discussions later, WODS and the City established the beginning of a new relationship, with both parties committing to rehabilitate a large area of open and relatively flat green space in the park for use as dedicated, full-sized, lined Ultimate fields for WODS league activities.

The problem? This green space had spent the past 30-plus years as unused and un-maintained land. The grass (for lack of a better word) consisted of a variety of grass species – Kentucky bluegrass, annual bluegrass, fine fescue and other grasses and weeds – and had been allowed typically to grow to 12" or more before being cut with a thresher. Though generally flat, the turf had divots, ruts and moderate swales throughout. A large-scale, invasive landscaping effort was out of the question, with budget constraints and the City's desire to maintain the natural appearance of the park as much as possible.

The solution was readily accepted by both parties: a multi-year effort of gradual improvement through natural restorative techniques and cultural practices.

The grass is now cut weekly to semi-

monthly to a minimum length of 3-4". This serves the dual purpose of providing the cushion that Ultimate players prefer, and allowing a healthier turf with better drought resistance.

An initial heavy topdressing will be followed by several more applications throughout the year to improve the ruts and divots. Initial spring aeration and overseeding will be followed by multiple subsequent applications. This topdressing and aeration schedule is more intensive than might otherwise be necessary for established sports fields, and is done to speed up the process of levelling and thickening the turf.

The field will be overseeded with perennial ryegrass, a strong grass with good root growth that tolerates drought and cleat wear well. The goal is to obtain a comfortable mix of perennial rye and the existing Kentucky blue. These grasses blend well together and are expected to provide suitable footing for the intense back-and-forth running and "cutting" motions typical to Ultimate.

There is currently no irrigation system in place, which presents some challenges for rehabilitation. But both the type of grasses used and the ability to keep the grass at longer lengths than traditional sports fields are expected to reduce the negative effects of this factor.

Weed control efforts will be moderate and will use cultural practices as opposed to spraying for weed eradication, owing to the location of the park near the Grand River and residential areas. In any event, Ultimate players tend to be environmentally conscious and have little aversion to weeds.

All of this work is overseen by Dan Dychuck, City of Kitchener's Supervisor of Sports Fields and the man who responded first to WODS' inquiries about open park spaces. Dan recognized the mutual benefits that such an arrangement would offer, and has remained involved throughout.

For their part, WODS members contribute as much as they can to the process of improving the field space, clearing rocks, branches and other debris, and generally leaving the fields in a better condition than when they arrive each week. WODS Ultimate players are content to tolerate short-term imperfections in turf quality for the benefit of securing a single, large-scale facility where multiple games can be played simultaneously. Both WODS and the City of Kitchener expect that turf conditions will improve significantly over the course of the 2008 summer season and subsequent years, with the expectation of reaching the quality of most other city-run non-irrigated fields within three to four years.

The additional benefits for WODS members are many. The single location provides a much more social atmosphere, with up to 10 teams gathering together for their weekly matches. Having a single, central location eases scheduling difficulties for league coordinators and reduces travel requirements for players. It is expected that many more players will be able to bike and carpool than in prior years. And players are able to make use of the other park amenities such as washroom and change room facilities, swimming pool and volleyball courts.

At the other end, the City of Kitchener sees benefits as well. The Ultimate fields expand the uses at the park and are expected to increase overall park attendance in 2008. These new uses and attendance remain compatible with the natural appearance and family atmosphere of the park setting. Indeed, the sport of Ultimate is unique in this regard. Ultimate players don't require professionally-graded, carefully-manicured sports fields. All they really need is relatively flat, open space. An Ultimate field doesn't need goalposts, foul poles, fences, or any of the other visual obstacles that typically announce loudly the presence of a sports field. A casual glance by the couple walking their dog or the family enjoying a picnic likely will reveal little or no evidence of the Ultimate activities played there several nights per week.

In addition, the City will benefit from the release of many soccer and football fields, formerly used for Ultimate games, back into the rental pool for those other sports groups.

This new endeavour remains a work in progress, but WODS and the City of Kitchener have high hopes for this marriage of a unique sport with a unique park location. At this time, WODS is one of only a handful of organizations in Canada with access to dedicated, full-sized Ultimate fields. Perhaps other cities and Ultimate organizations might be inspired by this relationship to seek out alternative, previously unconsidered sites to receive "the Ultimate treatment." ♦