

1 **WATERING SPORTSGROUNDS DURING RESTRICTIONS:**
2 **PERSPECTIVES FROM MELBOURNE METROPOLITAN COUNCILS**

3
4 Joanne Chong and Emma Partridge

5 Institute for Sustainable Futures, University of Technology, Sydney, NSW

6 joanne.chong@uts.edu.au www.isf.uts.edu.au
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ABSTRACT

Restrictions on outdoor water use have been a key element of the response to drought in metropolitan Melbourne.

When stage 3A restrictions were introduced in April 2007, managers of grassed sportsgrounds – mainly local councils – were limited to watering 1 in 4 sites, and were required to make a 25% saving in water used outdoors. In late 2007, an allocation scheme was introduced as an alternative option available to councils for watering sportsgrounds.

This research aims to inform the development of future drought response mechanisms, by providing insight into recent perspectives from Melbourne's metropolitan local councils on watering sportsgrounds during drought. Through a series of semi-structured interviews, this research explored the underlying drivers, barriers, constraints and opportunities for efficient water management for grassed sportsgrounds.

INTRODUCTION

Restrictions on outdoor water use have been a key element of the response to drought in metropolitan Melbourne. These have included restrictions on watering grassed sportsgrounds, which are mainly managed by local councils.

When stage 3A restrictions were introduced in April 2007, managers of sportsgrounds were limited to watering 1 in 4 sites, and were required to make a 25% saving in outdoor water use. Savings are compared to water used over a 12-month period prior to restrictions but during permanent water savings rules (1 March 2005 and 31 August 2006).

In late 2007, an allocation system was introduced as an alternative option, with the aim of enabling local councils greater flexibility in water management, and to improve overall efficiency and effectiveness of water use on sportsgrounds. Under the allocation scheme, a council may water any irrigated sportsground up to their allocation. The allocation is calculated from the amount used on 1 in 4 sportsgrounds. To move from 1-in-4 restrictions to the allocation scheme, Councils are also required to complete a water conservation plan.

Since the introduction of the allocation scheme, there has been continued interest by both local councils and the water industry in developing more innovative ways to encourage and support local councils in improving their water use.

The public benefits of access to and participation in sport and recreational activities have been documented in qualitative terms (see for example, Fam et al 2008 and GHD 2007). These include promoting social cohesion and preventative health care. In designing and implementing the current drought response framework, the Victorian water industry also sought to recognise the social and public benefits of participation in sports by communities, noting that "It is well recognised that sport and recreation provides social and health benefits to the participant and economic benefits to the local community" (Victorian and Water Industry Association 2004, p. 28)

However, the contemporary experiences of local council water managers, and their experiences in balancing public benefits and financial drivers, has not to date been documented. This research aimed to inform the development of future drought response mechanisms, by providing insight into recent perspectives from Melbourne's metropolitan local councils on watering sportsgrounds during drought.

This research was undertaken by the Institute for Sustainable Futures, University of Technology, Sydney, for the project "Feasibility Assessment of Alternative Water Restriction Models", funded by the Victorian Smart Water Fund.

METHOD

Semi-structured interviews

The interviews conducted for this research were undertaken using a semi-structured format. This approach involves the researcher using a pre-determined series of questions as a framework, but implementing this framework in a flexible way according to the responses of the interviewee.

As a qualitative research method, semi-structured interviewing is also suited to projects involving only a small number of subjects. Unlike quantitative research, its main aim is not to determine 'how many' subjects hold a particular view, or demonstrate a particular characteristic, but rather to develop a more in-depth understanding of the topic.

In selecting the 6 councils that were eventually interviewed, researchers aimed to achieve a reasonable mix across the following criteria:

- geographic location which influences climatic and soil types
- water retailer area

- water use model ('1 in 4' or allocation scheme)
- number of sportsgrounds
- level of access to alternative water sources
- relative socio-economic disadvantage

Limitations of approach

There are 31 councils in metropolitan Melbourne, and this research has only engaged with six of them. For this reason, even though the participating councils were chosen for their diversity, this small sample cannot be said to be representative and it is not possible to directly generalise the findings to the Melbourne local government sector as a whole.

Researchers also relied primarily on information provided by only a small number of people. Formal interviews were undertaken with only one officer at each Council – although some participants relayed information provided by a number of other officers. This means that information provided may not have been complete – for example, where officers had not been in the role or the organisation long enough to recall previous activities, or where responsibilities were spread across the organisation and the officer involved only held partial information.

FINDINGS

Current ground conditions and 'playability'

In general, councils reported that most of their grounds were in a 'playable' condition most of the time. However, it is clear that what qualifies as playable has changed in recent times. Councils and sports clubs have become more accepting of the less-than-ideal surfaces. As one interviewee identified:

There's a lot of understanding that's developed there now – the clubs tend to understand that times have changed and that they can't expect to be playing on lush green grass surfaces any more. There's definitely an understanding that what was seen as playable ten years ago and what's understood as playable today is different.

Further, while most grounds are playable, all the councils pointed to a number of grounds that were 'marginal' or 'struggling', or where use is restricted to protect the fragile condition of the turf (for example, competition will be allowed but pre-season training prohibited, or weekday training restricted).

Comparing different water restrictions models

Since the introduction of the allocation system in late 2007, water retailers have reported that there has been a progressive shift away from the 1-in-4 model.

Councils interviewed that had adopted the allocation model agreed that it provides a much greater degree of flexibility, and a greater ability to manage their water use effectively. With an

allocation, Councils can implement more sophisticated watering regimes that respond more sensitively to soil type, ground condition and weather. As one interviewee noted:

[W]e've been able to water two more sports fields under the new system and also [have] more flexibility with the times that we can apply the water... And the ability to deep water rather than shallow watering [...] which is more efficient.

As a result of this increased flexibility, councils are finding that they can keep more grounds in a better condition for a similar cost.

Further, the ability to convert more grounds to warm season grasses (a more drought-tolerant turf) was also mentioned as a significant benefit of this model. This grass needs to be irrigated in its establishment phase, but once established requires substantially less water than other types of turf. However under the previous '1 in 4' regime, one ground could not be converted (and watered to allow establishment) without removing another ground from the list of grounds that can be irrigated. Councils reported that this was a frustrating situation as they saw conversion to warm season grass as a longer-term solution than continuing to irrigate non-drought tolerant turf.

Despite the potential advantages of the allocation scheme, not all councils believed they would benefit from moving away from the '1 in 4' arrangement. One council interviewed for this research considered the allocation scheme and discussed it with the retailer. However, because of already efficient watering practices, this council has taken the decision that the volume of water already used is not sufficient to allow them to irrigate more grounds:

The only reason to move to an allocation model would be the ability to spread your water across a greater number of grounds. But we wouldn't be able to do that, because we are already using the absolute minimum on our grounds. [To do so would] put at risk the grounds we have.

Water efficiency, turf management practices and alternative water supplies

All councils interviewed are using some kind of irrigation monitoring technology, with most having programs to gradually upgrade this technology. The value of real-time monitoring (eg. Soil moisture and transpiration) that enables more precise and efficient watering was recognised by councils. Some councils were required to upgrade their irrigation systems to qualify for participation in the allocation model.

The gradual conversion of sportsgrounds to warm season grasses (which are more drought tolerant than traditional varieties) is clearly seen by all councils as a desirable long term strategy to significantly reduce the need to irrigate

sportsgrounds. All but one of the councils have converted at least some of their sportsgrounds to warm season grasses.

Five of the six councils interviewed had access to recycled water. Generally the more access to recycled water councils have, the better their overall situation is. As one interviewee identified:

[B]ecause we've been using a large amount of class A recycled water, our water situation has been very, very good. So that's been a positive.

Access to recycled water is highly valued by the councils, not only because it increases the volume of water available to them, but because it also provides additional flexibility (as there are no restrictions on its use). It also makes the conversion of more grounds to warm season grass possible. A number of councils advised that while warm season grass generally requires irrigation with potable water in its establishment phase, it can then be maintained with recycled water (which has a higher salt content).

Councils are also implementing (or trialing) a range of other turf management measures. As one interviewee noted:

[T]here's certainly other technological advances, not just about the computer software. [...] Just in terms of the way we manage our grounds with soil tests and types of fertilisers, wetting agents [...] the introduction of line planting and some experimentation that's gone on with that to see what gives us a better result.

In addition, many councils are experimenting – albeit in a limited way – with synthetic turf.

The ability to access state government funding is a critical factor in enabling councils to undertake conversions to warm season grasses and experiment with turf alternatives, other new technologies, and develop alternative water supplies. Councils interviewed identified that grant funding allowed them to innovate and trial new approaches:

We'd like to see the State Government continue to keep the drought relief funds going and particularly grants through the community water grants and stuff as well so that at least we can trial and keep pushing some of the new initiatives out there.

Councils also raised the issue that the general climate of uncertainty about water availability and the shifting water policy environment can make decision-making difficult for councils. When the future supply-side scenario is unknown, it can be challenging for councils to determine how much to invest in efficiency measures:

[T]here's a perception.. that once some of the large water augmentation projects [come online]; the desalination unit and north-south pipeline, pumping water down to Melbourne from savings made north

of the divide; that water will go back to being plentiful.

So there's still, at least in the community and even in the organisation here, [the feeling] that we're going to go partly back to the days of yesteryear where water was sort of available.

It might cost more but there won't be restrictions on its use. [Some people think] that those projects will mean that this is just a temporary situation. I don't share that view myself but, there's that [view] that these water issues might partly go away.

Local council relationships

Councils are very aware of the importance of sportsgrounds to their communities, and of people's expectations that council maintain their grounds appropriately:

If [the grounds] are not up to scratch, the clubs get in the paper and that sort of stuff. I mean it's not relevant to the water issue but [one] ground was incorrectly sprayed, that was front page. And the week before in about page five, the ground that was closed, there was a councillor there next to sad looking kids. Yeah, community sport's very important here so anything that impacts upon that gets a good hearing from the councillors and is reported in community newspapers and stuff.

While in general councils are responding to community expectations, some councils are also taking a more proactive position in their promotion of the social value of sport.

All councils reported that they maintain good relationships with the sports clubs that are using their grounds. Generally councils have sought to keep sports clubs informed about their sportsground management policies, and the requirements under the restrictions regime. This is done via signage at grounds that explains the policy, and meetings with club members.

Councils reported that while there is some frustration in the community, in general there is a reasonable level of acceptance about the state of the grounds and councils' efforts to manage them during drought and water restrictions. Similarly, while some clubs have expressed frustration at the lack of irrigation, they generally understand that the problem is not entirely within council's control:

The clubs come to us and say oh why can't you irrigate this? We say well we're just not allowed to! [Interviewer: So is there a good understanding of that generally?] Yes. So they don't like it, but we don't have much choice. We don't like it either.

One problem mentioned was that some clubs from outside the LGA have use grounds without authorisation:

Most councils reported good or very good relationships with their water retailers, although there were some frustrations. Where councils have

been able to negotiate an allocation from their retailer, they were generally reasonably satisfied with it, particularly where special conditions had been recognised. In cases where special exemptions had been made, or special conditions recognised, council officers were particularly happy with the relationship with their retailer.

The main frustration for councils was the administrative requirements of the relationship with their retailer, with a number recalling that the paperwork and administration required to qualify to change to an allocation system had been 'onerous'.

Another frustration mentioned by one interviewee was that the retailer sometimes demonstrates insufficient technical knowledge about irrigation and that this can hamper Council's efficiency efforts:

Water authorities have not had the technical understanding of the application of irrigation to sports fields, and as a consequence in many situations working within restrictions has reduced efficiencies of application. [...] I think that as well, because we deal with the person that does water conservation they're not going to have specialist knowledge in the actual irrigation practices.

Insurance premiums

The Melbourne water retailers suggested that, anecdotally, insurance premiums paid by councils and clubs had been raised due to the increased risk of injury on grounds – and that this had led to the closure of grounds:

"Over the past year, due to better knowledge in regard to the course of sports injuries, insurers have been reluctant to carry the risk of participants playing on hard grounds that they consider may increase the number and severity of injuries... This situation has contributed to football grounds being declared unfit for play due to ground hardening, resulting in training sessions and football matches being deferred, transferred to other grounds or cancelled altogether." (Victorian Water Industry Association 2004, p. 23).

However, interviews with councils and Civic Mutual Plus (CMP), the insurer for 77 of 79 Victorian Councils, did not reveal any particular insurance related issues due to the drought or water restrictions. Nevertheless this research did not include interviewing sports clubs.

CMP noted that their advice to councils had remained consistent, and the drought has only caused this message to be reinforced – namely that councils need to have in place a monitoring regime for their sportsgrounds; carrying out both reactive and proactive inspections; and taking appropriate precautions to reduce risk and prevent accidents.

An interview with JLT Sport, the sports insurance broker for most of the file-based sporting codes in Melbourne, revealed that there have been no increase in claims against sports clubs in Victoria

since restrictions commenced (noting however that insurance claims are not necessarily a good indicator of the number of injuries). JLT Sport also noted that the cost of premiums actually reduced in the five years since 2003/04.

The need for integrated management of water

After several years of drought and restrictions, Councils now appear keenly aware of the need for a strategic and integrated approach to the issue of water management within their organization. Many have either established mechanisms to achieve this or are in the process of doing so. It seems that the introduction of water restrictions regimes encouraged councils to develop more integrated approaches to managing their water use.

At one council example, a Strategic Water Management Committee includes officers from all units within council as well as councillor representation. This committee enables council to take a fairly holistic view of water issues:

That's taking it a little bit further than just the impact on sports grounds and looking at the whole of water management and linking it together. So we're looking at bore quality improvement through to water sensitive urban design and other things like that as well.

Councils also identified that it is also important to improve integration across the different levels of government:

[I]t is important that even with the water groups that are out there, that they think about that putting 'all things water' into the one basket and thinking about the water improvement and quality, the storage. It's all those little things that are out there and tying them all together that's important for us. [...] So when we're doing the big drainage schemes or thinking of freeway development, where you know there's obviously going to be a lot of water come off such a project, that we're thinking about what happens to that water at the same time. It's about all the levels of government working together. [...] I think everyone talks about it but sometimes it doesn't happen.

SUMMARY AND CONCLUSIONS

Flexibility enables long-term water efficiency

Councils identified that the key benefit of the allocation system, compared to the '1 in 4' restrictions, is that it allows them the flexibility to efficiently manage their water use across sportsgrounds over longer time periods.

Combining the "incentive" approach of an allocation system with mandatory requirements appears to be an effective model to encourage uptake of efficient irrigation technology and practices. It also has the benefit of not penalising or discouraging early adopters. There could be the potential to extend or

apply this approach to encourage further improvements in irrigation technology.

A key challenge remains for councils in the west and north-west. Further exploration of schemes that enable flexibility for councils in these areas may be justified. Such measures could be targeted to specific soil or climate conditions so as not to penalise or discourage early adopters of efficient practices.

Uncertainty about the urban water system is affecting council investment decisions

Finding sufficient funding for infrastructure investment is an ongoing challenge for councils. Many infrastructure projects have long-term benefits for their community, but involve large upfront costs. Improving water efficiency on sportsgrounds – including implementing warm season grass conversions, improvements in irrigation systems, or developing alternative water sources – fall into this category.

Uncertainty about future water supply availability, prices and restrictions mean that councils are deferring at least some investment in systems and practices to improve sportsground water management.

Innovative turf management could yield savings

Several interviewees identified that warm season grass conversion was a key approach to ensuring longer-term water savings (compared to other grass types). Although it is evident that warm season grasses require less water, it is not yet clear under what conditions they can survive with no water. As many councils are converting to warm season grasses, an opportunity exists to evaluate water savings and needs from this type of turf across different areas.

There have been some initial trials of artificial turf. In addition to possible issues of acceptability, a key barrier is the initial installation cost involved. However, unlike warm season grasses, artificial turf does not require any water, and extension of these trials could be worthwhile.

Institutional arrangements and collaborative relationships are key to leveraging water efficiency

Opportunities could exist to support council strategic water planning and management, beyond the sportsground sector. As integration of water management further develops, there could also be opportunities to implement and support water efficiency solutions across water uses – for example, incentives and offsets across council water uses.

Equity considerations

The councils which are unable to access the allocation system also correspond broadly to areas of greater socio-economic disadvantage, which may translate to those councils facing additional

resource barriers (although indicators of socio-economic disadvantage such as income or house value are not necessarily a good indicator of a Council's financial situation – the revenue base of a council may be more strongly related to the nature and extent of commercial and industrial enterprises in the area).

While the findings of this report cannot be directly generalised across the sector, it may be that councils in the west and north west continue to find allocation systems to be infeasible.

A detailed analysis of the social equity implications of water restriction models across all council areas would be worthwhile. Such an analysis could inform the design and justification of future schemes. Such schemes may be able to include measures to assist councils that are 'disadvantaged' (by climate, soil type or other reason) and would otherwise struggle to maintain community assets to a sufficient level.

Water saving potential of recreational facilities other than sportsgrounds

The focus of this research was on grassed sportsgrounds, which are a significant part of local culture and community. However, they are only one element of the wider sporting and recreational services and facilities that councils provide, or could provide to their communities. Some interviewees also mentioned issues relating to water management for parks, gardens and other passive-use recreational spaces.

Further research that might be worthy of consideration would be an analysis of the various types of sporting facilities that currently exist in each council area – both grassed surfaces and facilities not involving grass.

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REFERENCES

Fam DM, Lopes A, Moseley E, Mathieson L, Morison J & Connellan G. 2008 Irrigation of Urban Green Spaces: a review of the environmental, social and economic benefits, CRC for Irrigation Futures Technical Publication 04/08.

GHD 2007. Strategies for Managing Sports Surfaces in a Drier Climate, report for the Municipal Association of Victoria Sports Surfaces Task Force.

Victorian Water Industry Association 2004. Victorian Guidelines to Water Savings Measures and Restrictions: Discussion Document.