

Julie's Bicycle Practical Guide:



Water Management at Outdoor Events

The arts and creative industries are ideally placed to lead on environmental sustainability. With creativity and inspiration they can champion a greener economy, energy efficiency, challenge our reliance on fossil fuels, make creative use of otherwise wasted materials and open new ways to greener production and living.

Water at Outdoor Events: Version 2014

Julie's Bicycle Practical Guide:

Water Management at Outdoor Events

What this guide will cover

This guide will help organisers of outdoor events develop an environmentally sustainable approach to sourcing, storing, using, reusing and disposing of water used at events

It covers topics across pre-event, event delivery and post event actions including: water conservation, bottled water; avoiding pollution, and liaising with suppliers and traders.

Who is this guide for?

This guide is aimed at anyone involved in decision making at events particularly directors, procurement managers, concession managers and operations teams..

What this guide will not cover

This guide focuses on water management in the context of environmental sustainability and is not intended to be a comprehensive overview to water provision, infrastructure, and wastewater in general at outdoor events.

Further artform-specific information, case studies, and support can be found on the Julie's Bicycle website. www.juliesbicycle.com

Creating the Conditions for Change

There are four key stages to taking action on environmental sustainability:



- **Commit:** put in place the structures, resources, policies and responsibilities necessary to support and action your initiatives.
- **Understand:** understand your impacts and establish systems to measure and monitor them on a continuous basis.
- **Improve:** implement an action plan to reduce your environmental impact
- **Communicate:** engage your stakeholders including your team, suppliers and audiences; share and exchange knowledge with others in the industry.

Your success at integrating environmental sustainability into the way you work is often dependant on the internal culture of your organisation and the resources available to you.

Your key ingredients are: **knowledge; skills; time and enthusiastic people.**

It's important that the whole organisation should be involved in the process; this is an opportunity to test new ideas, build support and use existing experience. Without people buy-in, you will at best limit, and at worst fail, to achieve your goals.

And finally, some dedicated, even if modest, budget is also helpful!

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Introduction

Water scarcity is a big global issue and affects millions of people every year. It's easy to think that our 'wet' weather in the UK means we are not affected by such issues, but there has been a rise in droughts in recent years, and this has directly impacted some events, especially in the South East. Increasingly, water has to be sourced from further afield, which impacts on cost for events, but also on the environment with additional transportation required to ferry it to the site.

Water is essential for hydration, comfort, site productivity, performers, sanitation and is often a revenue stream. The rise of 'glamping' in recent years has changed audience experience and expectations increasing the amount of running water needed at many events. With this in mind, it's important to re-examine your water management to deliver safe infrastructure at minimum cost and the least environmental impact. Whilst the safety and availability of water is key to planning, water conservation or 'efficiency' is often sidelined. However, a renewed national focus on water regulations related to temporary events in recent years has encouraged many events to improve their planning, which is an opportunity to properly consider water conservation.

Effective water conservation is both a pressing environmental issue, and good practice in the face of changing weather patterns and potential future water restrictions that may be implemented in the near to mid-term future.

Water efficiency can benefit your outdoor events in the following ways:

- Reduce costs associated with storage, removal, transport and disposal of waste-water.
- Reduce costs to events that pay for water by volume.
- Reduce traffic movement onsite by reducing the quantity of waste-water that needs to be removed.
- Reduce the environmental impact of your event by consuming less water.
- Improve audience perceptions of your event and its green credentials.

Types of Water



| Type of water | Definition | Uses |
|-------------------|---|--|
| Potable water | Drinking water. | For drinking only. |
| Blue water | Clean water not suitable for drinking. | Washing, showering and other "human contact" activities. Not suitable for drinking. |
| Grey water | Water that has been used for washing or showering, and that doesn't have any organic contamination. | Can be recycled for toilet flushing (once it's been filtered) or other "non-human-contact" activities, or stored onsite and then used for irrigation. |
| Brown/black water | Effluent/sewage/dirty waste water. | None. This needs to be dealt with either through existing sewage systems or temporarily stored safely in septic tanks until the end of an event, then taken away by "suck trucks" which dispose of it into the sewer system. |

Pre-Event Planning



Define Your Aims

Set out what you want to achieve. This will allow you to measure your success and help communicate your aims to contractors, staff, and audiences.

Things to Consider when Planning Water Infrastructure:

| | |
|--|--|
| User experience: | <ul style="list-style-type: none"> Ease of access to water. Taste. User experience in toilets, urinals and showers. Aesthetic of equipment and signage. Traffic movement onsite during the event. |
| Water conservation and environmental impacts: | <ul style="list-style-type: none"> Overall water consumption. On-site environmental impacts. Indirect environmental impacts of water consumption e.g. transport. Travel miles associated with waste water removal post-event. Use of disposables associated with water – bottles, cups etc. |
| Safety: | <ul style="list-style-type: none"> Access to hand-washing facilities for everyone onsite – audience, staff and traders. Safe potable water supply. Continuous supply of water. |
| Waste water: | <ul style="list-style-type: none"> Storage and disposal. |

Who will be using Water and How Much?

Establish water requirements and potential sources of waste-water:

| Areas and stakeholders to consider | Areas to manage |
|------------------------------------|--|
| Audiences | Access to drinking water, limiting/banning bottled water, numbers of toilets, numbers of showers. |
| Artists | Access to drinking water, limiting/banning bottled water, numbers of toilets, numbers of showers. |
| Traders/contractors | Access to water for washing/cleaning, access to drinking water (both for the traders themselves and to provide for audiences). |
| Crew | Access to drinking water, access to water for cleaning/washing. |
| Toilets | Numbers of toilets, type of toilets (flushing, composting etc), storing and disposing of black water. |
| Showers | Numbers of showers, using water efficiently, disposing of waste water. |

Possible aims include:

- Reduce overall consumption of water.
- Reduce movement of traffic during the event associated with water management.
- Reduce the amount of polluted waste water created by your event.
- Prevent contamination of the land and local watercourses.

Set out a three-year plan with annual targets to maintain continuity of approach. Undertake an annual review based on the experiences of each event(s) to help fine-tune your actions and achieve your ultimate goals. Make this a part of your environmental policy and action plan.

For environmental action plan guidance visit our website. www.juliesbicycle.com/resources

Focus on Bottled Water

Convenience and consumer habits have resulted in disposable plastic bottles becoming commonplace at events. This has a massive environmental impact both in production and transportation as well as the amount of waste generated.

Consumer campaigners Which? estimate that the number of plastic bottles sent to landfill each year would fill Wembley Stadium twice over and describe bottled water as an unnecessary drink that costs us £1.68bn a year. It takes approximately 7 litres of water to produce 1 litre bottle, so it's actually a very water intensive product!

You can reduce the number of bottles onsite through a number of methods:

- Encourage festivalgoers, crew and artists to bring a re-usable bottle with them.
- Sell re-usable bottles onsite as merchandise.
- Ensure that there are plenty of accessible points where bottles can be refilled with drinking water.
- Provide crew and performers with re-usable bottles and access to drinking water taps instead of bottled water.
- Ban the sale of bottled water (and other drinks) altogether. This can drastically reduce the energy use associated with the production of the bottles, and the waste associated with used bottles. However you will need to ensure that there are enough places to get drinking water and that refillable bottles are on sale on site.

See also: [Making Waves: Plastic Free Festival Guide \(Raw Foundation and Kambe Events, 2014\)](#)

Water Conservation



Here are a few ways to reduce water use at your event:

- Use hand sanitiser dispensers rather than taps where appropriate. Use environmentally friendly hand sanitizers.
- Use 'nipples' rather than taps for hand washing as these use less water.
- Avoid taps that can be left on. Use taps that require the user to press them continually to get flowing water, or timed taps that automatically turn themselves off.
- Look into re-using grey water from showers and other washing facilities in flow-through urinals or to flush toilets.
- Use timers in showers to encourage people to shower quickly, this can also help avoid queues. Also, consider limited opening hours.
- Plan advance communications for your audiences to raise awareness of the importance of using water wisely.

Questions to ask your contractor(s):

- Do the taps have flow restrictors and/or sprinklers to regulate flow?
- Are there reservoirs being used which are drained/wasted at the end of the event, and could they be monitored to ensure higher usage toward the end of the event to reduce wastage?
- Does the water system have flow restrictors built in (where appropriate) to reduce unnecessary water pressure and associated wastage at points of use?

Avoid Pollution



One part of avoiding pollution is storing waste-water safely on site. Another is avoiding local contamination through the provision of appropriate infrastructure.

- Provide suitable and adequate amounts of storage for waste-water that is secure, and consider how this is enforced and monitored across the site throughout the event.
- Do a pollution risk-assessment of your site and focus on watercourses, groundwater systems, or drainage systems that could be affected by a spill on or around your site, and consider these in site planning.
- Store wastewater and other contaminants away from any high-risk areas.
- Prepare a Pollution Incident Response Plan to deal with any spills.
- Set out the use of eco-friendly and non-toxic products as a requirement for traders. You can do this by including a clause on these products in their contract.
- Set out the use of non-toxic fluids as a requirement for sanitation providers.
- Request that audiences use non-toxic products for cleaning in public showers.
- Encourage traders to separate fats and oils to avoid contamination of grey water and provide the facilities for them to do so. This can also be a contract clause!
- Ensure appropriate drainage facilities or waste water storage is available for traders
- Ensure that there is an adequate number of toilets and use signage to remind audiences to use the toilets provided.

Glastonbury Festival “Don't Pee on The Land”

Glastonbury Festival has a team of five people managing the sustainability of its operations across infrastructure, procurement, waste management and recycling, traffic management, audience behaviour and overall coordination of environmental initiatives. The Festival's long list of campaigns and initiatives designed to address its environmental impacts are outlined including The 'Love the farm, leave no trace' campaign ensures that all negative impacts on Worthy Farm are being minimised through a range of initiatives and the 'Don't Pee On The Land' campaign ensuring the audience used the loos provided and didn't contaminate the environment.

www.glastonburyfestivals.co.uk/please-dont-pee-on-the-land/



**Don't pee
on the land**

You'll pollute the farm and kill the festival.
Use the loos provided.



4. Permanent Infrastructure



If you have ownership of a site or the opportunity to invest for the long-term, consider permanent infrastructure and systems to improve water conservation.

Examples include rainwater harvesting, filtration systems for re-use during events, storage capacity and infrastructure for re-use of water onsite, and reed bed filtration systems for grey water and sewage.

Get some expert advice specific to your circumstances, as not all of these will be suitable for your event and site.

5. Toilets



There are many choices of toilet types, each with their own pros and cons. Below is a table of estimates based on manufacturer's specifications, but it's also worth having these conversations with suppliers directly.

Table Comparison of Water Consumption per use by Toilet Type

| Toilet type | Water consumption rating | Average water consumption per use (Litres) | Notes |
|--|--------------------------|--|---|
| Plastic toilets | Medium | Less than 0/03 Litres* | 10 Litres of water is re-used continuously in the flushing. Water replenished with each service. Cleaning water generally used to part re-fill basin. |
| Compost toilets / long drop | Low | None | Uses no water for flushing and very little for cleaning. |
| Vacuum toilets | Low | 0.4 Litres | Units also require power |
| Flushing toilet trailers (4-6 toilets) | High | 6 Litres / 0.1 Litres** | Fresh flush / re-circulation units, respectively. Hand washing water used in addition (usually 1 litre per use). |
| Urinals | Low/Medium | None | Usually waterless with the exception of luxury units. |

* Based on manufacturers specification (Satellite Industries): 265 litre basin size, average 10 litres flushing water used in the basin per service, and average of 0.75 litres per 'deposit'. Capacity of unit is 340 uses. Figure rounded up to nearest 0.1 litres.

** Based on manufactures specification of 1500 litre tank size, 6 litres water per flush for fresh-flush units, and 200 litres flush water being re-used for recirculation units over 1733 uses (0.75 litres per use). Note that units may vary.

Natural Event, Compost Toilets

Natural Event designs and operates effective, practical, enjoyable and appraised toilet systems for festivals, events and gatherings. Natural Event has pioneered the introduction of composting toilet solutions to festivals around the world. Having begun their impact in 2000 with an alternative toilet system that has the design and durability to service any demand. Natural Event Composting Toilet Systems are Changing the World from the Bottom Up. Since their formation they have provided compost loos for international festivals including Glastonbury, Greenman and V Festival. Glastonbury Festival now has over 1,000 compost toilets across the site.

www.naturalevent.com.au

LooWatt at Latitdue:

LooWatt is a waterless toilet system that seals waste in a biodegradable film and can be linked with an anaerobic digestion system to generate energy (biogas) and fertiliser/compost. It was first demonstrated at Latitude Festival, July 2014. LooWatt's environmentally friendly, chemical-free loo operates in locations without water or power, providing a high-end, clean and pleasant experience. They estimated that they saved around 8,000 liters of water during the festival.

www.loowatt.com

Think about other environmental impacts of toilets, such as chemical use, energy consumption for lighting and hot water in trailer units, transportation and how the sewage is managed post-event.

- Most municipal sewerage processing facilities in the UK use natural biological systems. Toxic fluids can impair these processes, so where possible their use should be reduced or eliminated.
- Use companies offering solar powered toilet units.
- Think about the travel miles associated with the choice of contractor and the amount of waste produced when choosing a type of toilet and supplier.

Water Safety Management Plan (WSMP)



Water conservation should be integrated into the systems and processes you use for water management in a wider sense at your event. Water regulations are being more strictly enforced at UK temporary events since the London 2012 Games. Work with your contractor to develop a detailed plan for how water will be managed safely at your event. A WSMP generally includes the following chapters/topics:

- Introduction and regulations.
- Description of water system.
- Water infrastructure map.
- Infrastructure disinfection.
- Sampling and monitoring.
- Proof of preparation and proof of competency.
- Contingency plans.
- Water conservation.
- Communications plan.
- Water risk assessment.

For more specific guidance on managing water safely at events please refer to the Water Guide for Festivals (2013) produced by the Association of Independent Festivals.

Stakeholder Engagement/Communication Planning



Think about the different stakeholder groups using water at your event, how they can affect your overall conservation plans, and how you can involve them. Often your workforce will be temporary staff, contractors and traders, so effective communication is essential. You will need to bring them up to speed with your water efficiency strategies so you can work with them to put the plans into place.

| Who | Aim | How | Suggested Documents and Policies |
|---------------------------------------|--|--|--|
| Management team/ key staff members | Commitment and effective delivery of Water Safety Management Plan and water conservation objectives. | Consult all relevant staff when developing the aims and ensure documents are shared and integrated into planning. | Water Safety Management Plan Water Conservation Action Plan (brief) |
| Water and sanitation contractors | Delivery and management of safe and efficient water and sanitation infrastructure | Thorough planning, and focus on water conservation. Make this an explicit objective of their delivery of the contract. | Water Conservation Action Plan Contracts |
| Audience | Engagement with water conservation onsite | Pre event communications including website, social media and direct emails. Clear signage onsite. Possible tie-in with NGOs/charities/campaign groups. | Printed festival and information programme. |
| Food concessions | Reduction in unnecessary water use, preventing pollution of the ground, and avoiding pollution of grey water with fats and oils. | Clear pre-event communication. Effective onsite liaison and support. Bonds or deposits. Availability of recycling sites for oils/fats | Trader Briefing Contracts |

- Communicate to your suppliers, audiences, staff and other stakeholders what you are doing to conserve water and why.
- Ensure a co-ordinated approach to significant changes between years such as new types of toilets, or 'no plastic bottled water' policies.
- Run a campaign or initiative about water, to communicate effectively with your audience.

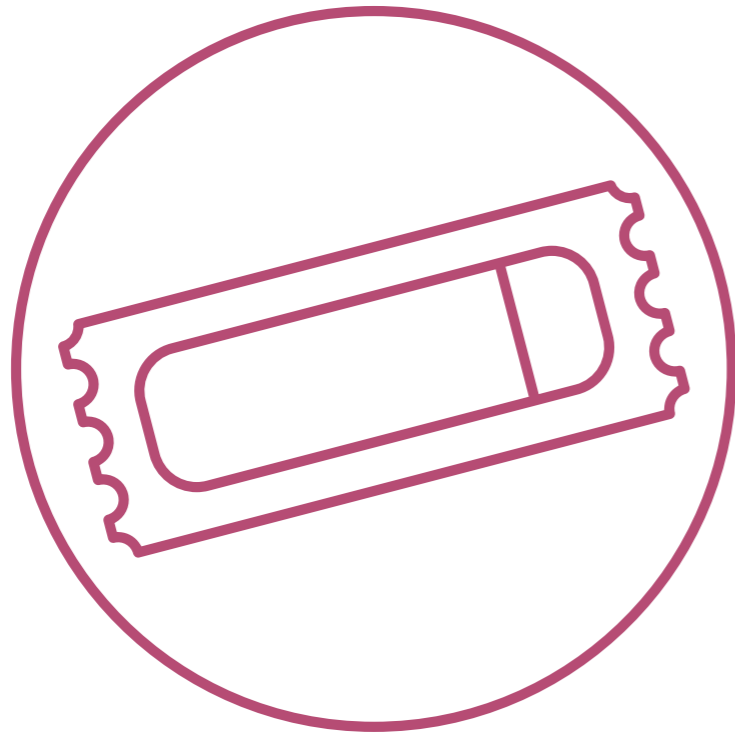
Shambala Festival: Bring a Bottle

Starting in 2013, Shambala Festival banned the sale of bottled water onsite and asked all festival goers, artists and staff to bring a reusable bottle with them, as well as selling reusable bottles onsite. The festival increased the number of taps onsite in order to ensure good access to drinking water and worked with charity FRANK Water to provide chilled, filtered drinking water throughout the site. They also introduced re-usable, washable cups on all of their bars, for which they charged a £1 levy to ensure the glasses' return.

Circa 100,000 plastic bar cups (various sizes) and circa 10,000 plastic water bottles were prevented from being used once and thrown away or recycled, and from the bar cups initiative alone, one tonne of plastic was saved – also reducing the volume of waste on site! Audience feedback showed overwhelming support for the Bring a Bottle campaign, with 94% feeding back that they thought it was a great idea.

www.shambalafestival.org/essential-info/sustainability/designing-out-disposables/

During The Event



Signage



Visibility is essential in influencing audience behaviour, but you will be more successful if you communicate in advance, as well as during the event, to reinforce good onsite behaviour.

Use public usage points to tell your audience 'why' you are practicing water conservation. Audience feedback from UK suggests festivalgoers respond well to this information and are more careful when using taps.

- Signage needs to be as simple as possible, symbols and illustrations are helpful.
- Keep signage consistent throughout the site.
- Use clear positive messages. An example of good signage may be 'Please turn taps off after use to conserve water and avoid muddy ground! Thank you.'
- Avoid long lists of dos and don'ts.
- Make sure your signage for water points is visible from a distance and high enough to avoid being obscured by tents or other structures.
- Use your website to communicate your water points. Use the same colours and symbols as onsite signage.
- Provide lighting around the water points to ensure visibility at all times.
- Position water points at convenient locations where there is a high footfall of people, and cluster with other services where possible.
- Make a fun feature of your water points! For example, some events offer several types of flavoured water at beautifully decorated water fountains.

Wateraid, Pump up the Volume:



As part WaterAid's presence at Bestival in 2013 for their Pump up the Volume campaign, staff and volunteers helped spread the word about the importance of safe water, sanitation and hygiene by giving out water, cleaning toilets and picking up litter which was then recycled.

The pirate themed WaterAid marquee in the Grassy Hill area welcomed festival goers to have a drink of water and an exclusive temporary tattoo while learning about the WaterAid campaign. Participants were given the opportunity to share the campaign messages through social media by using a box full of props and outfits to dress up and have photos taken which were then posted and shared through the campaign Facebook page and Twitter feed.

www.wateraid.org

Liaison and Enforcement



- Check traders and other contractors are following requirements e.g. separating out cooking fats and oils.
- Check wastewater is being stored securely on site. Have processes in place to check for leaks.
- Be on the look-out for emerging issues around pollution, e.g. shortages of toilets.
- Look out for water wastage hot-spots on site, e.g. public taps. Could signage be improved? Ensure any spillages that could potentially lead to local pollution are addressed promptly according to a pre-decided Pollution Incident Response Plan.

After the Event



Measuring and Evaluating



It's important to be able to document your water usage post-event to compare performance each year.

If you are connecting to the mains supply, there is likely to be a water meter. Check this at the beginning and end of your event so you know how much you have used, so you can compare with future (or past) years.

If there is no water meter, or you are bringing in large volumes of waters in tankers and storage containers, speak to your water supplier about how best to get data.

What to ask your Contractor:

Specify the following in your contract with your management company, or if you are managing your own water, put together:

- Accurate figures for water consumption for the event (cubic meters of water).
- Detailed report/evaluation of systems on-site including recommendations for improvements.
- A summary breakdown of where water was consumed.

Maintain an open dialogue with contractors for clarity instead of overlooking details to protect perception of performance.

Evaluate your Performance:

- Compare what you have achieved to the aims defined before the event.
- List key challenges, successes, and opportunities for improvement to shape your approach and inform an action plan for changes early in the planning stages for subsequent events.
- Prepare and internal summary of water management and headline facts that can be shared with all stakeholders.
- Make a post-event survey that includes questions about water.

Julie's Bicycle's Creative IG Tools

The Julie's Bicycle's Creative IG Tools are a suite of carbon calculation tools designed specifically for creative and cultural organisations to help you to measure your carbon footprint on an annual or per-activity basis. There is a Tool for Festivals and Outdoor Events allowing you to track impacts including energy use, water use, waste, and audience travel according to industry-specific metrics.

Note that water use will only constitute a fraction of your event's carbon footprint, but is associated with its own environmental impacts and water scarcity is a growing global problem. The IG Tools can also be a useful place to track your annual water use by volume. The IG Tools will display your results either by event or on a per audience day basis (i.e. per person on site per day). This means you can compare both the total amount of water used on site as well as the water used per person on site per day between years to help you keep track of your performance.

However, this is not a perfect indicator: weather conditions can have a huge impact on per capita water consumption on site. You're likely to use a significantly larger volume of water in hotter, dryer years even if you have more effective management strategies in place.

www.juliesbicycle.com/industry-green/ig-tools

Julie's Bicycle Benchmarks

Julie's Bicycle also publishes a series of online benchmarks, which you can use to see how your festival or outdoor event compares to the industry average on water use, waste produced, recycling rate, and energy used. The benchmarks are given on a per audience day basis (i.e. per person on site per day). They are based on data collected through Julie's Bicycle Creative Green certifications, the Creative IG Tools, and partner organisations from across the cultural sector:

www.juliesbicycle.com/resources/benchmarks

Regulations and Legislation

The following are links to some useful references on the applicable regulations and legislation in England that any environmental sustainability measures your organisation undertakes should comply with. Please note that this is not an exhaustive list and should not be considered as legal advice.

Causing pollution or allowing it to occur can be a criminal offence. It is important to avoid any wastewater being discharged onto the ground with the potential to contaminate inland freshwaters, coastal waters or groundwater directly or indirectly. If you are near a river or lake that is a habitat for fish or other species, additional protections may apply. [The Environment Agency](#) publishes a pollution prevention guidance (PPG) series and good practice guidance on dealing with spills and other specific topics:

The Private Water Supplies Regulations 2009 govern the supply of drinking water at events and are enforced by the local authority. Where water is being drawn from the main water company, the Water Supply (Water Fittings) Regulations 1999 are applicable, which are enforced by the water company.

[Leeds City Council has published useful guidance](#) specific for events (although the specifics apply to events held within their jurisdiction).

[The Purple Guide to Health, Safety and Welfare at Music and Other Events](#) also provides guidance on water provision and sanitation. [£ Subscription]

Further Reading and Resources

[Julie's Bicycle Creative IG Tools](#)

[Julie's Bicycle Benchmarks](#)

[Julie's Bicycle Practical Guides](#)

The following guides would be useful to read alongside this

- [Waste Management at Outdoor Events](#)
- [Energy Management at Outdoor Events](#)
- [Procurement](#)

[Making Waves: Plastic Free Festival Guide, Raw Foundation & Kambe Events \(2014\)](#)

[WRAP Guide to saving money through water efficiency Association of Independent Festivals: Water Guidelines for Festivals \(2014\): \[members only\]](#)

[Sustainable Event Management: A Practical Guide, Meegan Jones \(2014\) \[££\]](#)

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Chris Johnson is co-founder and a Director of Shambala Festival, and a Director of Kambe Events Ltd, a sustainable events management consultancy.

Julie's Bicycle

SUSTAINING CREATIVITY

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