Providing safe drinking water for your festival: a guide for event planners

Local fairs, festivals, carnivals, concerts, and other outdoor events play an important role in our cultural heritage here in Wisconsin. Planning these events takes time and energy but also requires familiarity with many different rules. One of the most important considerations is providing safe and reliable drinking water for your guests. This fact sheet contains information to help you put on a safe event and avoid potentially dangerous health situations.

A few steps are critical for providing safe, reliable, drinking water at your event:

Planning ahead—prepare in advance

- ✓ identify a safe, reliable water connection point
- ✓ line up responsible people

Hooking up—do it right

- ✓ use approved materials for establishing the connection
- ✓ use backflow prevention
- ✓ use proper pressurization
- ✓ disinfect and flush before use

Keeping it safe—daily operations and maintenance

- ✓ test the water
- ✓ maintain water pressure
- ✓ keep the system water tight

Read on for more information about these important steps.

Spritz the Water Drop teaches kids about the importance of safe drinking water.

Plan ahead to provide safe drinking water at your event!

Important elements of a safe drinking water hookup at your festival

- **Proper hoses and piping**
- **Backflow protection**
- **Disinfection and flushing**

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Planning ahead—prepare in advance

Where do you plan to hook up to a water supply, and is it a safe connection?

Temporary services or hookups are most commonly connected at fire hydrants. These connections are allowed by state codes as long as a proper backflow protection device and water meter are installed at the connection point. Keep in mind that backflow devices may not be located in a pit, vault, depression, or area susceptible to flooding, and should be 18 inches above grade if serving campers. Connecting to a fire hydrant requires some extra steps and special precautions—see the sidebar at right for more detailed information.

One alternate hookup option may be available: some water providers are willing to fill a tanker truck and use it to deliver potable water to your event. The benefit is that you would not need to connect to a hydrant and install backflow protection equipment. The tank is filled using an approved hose and with an adequate air break between the hose and tank to prevent anything from flowing back to the water provider's system.

Special care needed for water hydrant hookups!

Connecting to a fire hydrant requires several steps and precautions:

- Get permission from the local water provider to operate their fire hydrants. Tampering with a water provider or utility's water lines or hydrants is a federal offense.
- Make sure the hydrant, valving, and meter are located in a secure area to prevent tampering or damage.
- Make sure the hydrant is flushed and disinfected prior to hooking up the water line. This will remove sediment and any film in the hydrant service line and connection point.
- Make sure the hydrant is either fully open or closed. A fully open hydrant ensures the below ground drain is sealed during operation.
- The connection, including backflow protection valve and water meter, may need to be installed by the water provider's operator or plumber.
- Record the meter reading before and after your event, and totalize the amount of water used. The water provider needs this information for determining annual water system losses and possibly for billing purposes.
- The water provider may require you to post signs that the water is considered "non-potable" past the connection point, for liability protection.
- Inspect the equipment regularly to ensure it is functioning properly.

Event hosts should make a plan for setting up the system that includes appointing someone to take charge in the event of an emergency or failure. This person should know how to shut off the connection and notify the water provider.

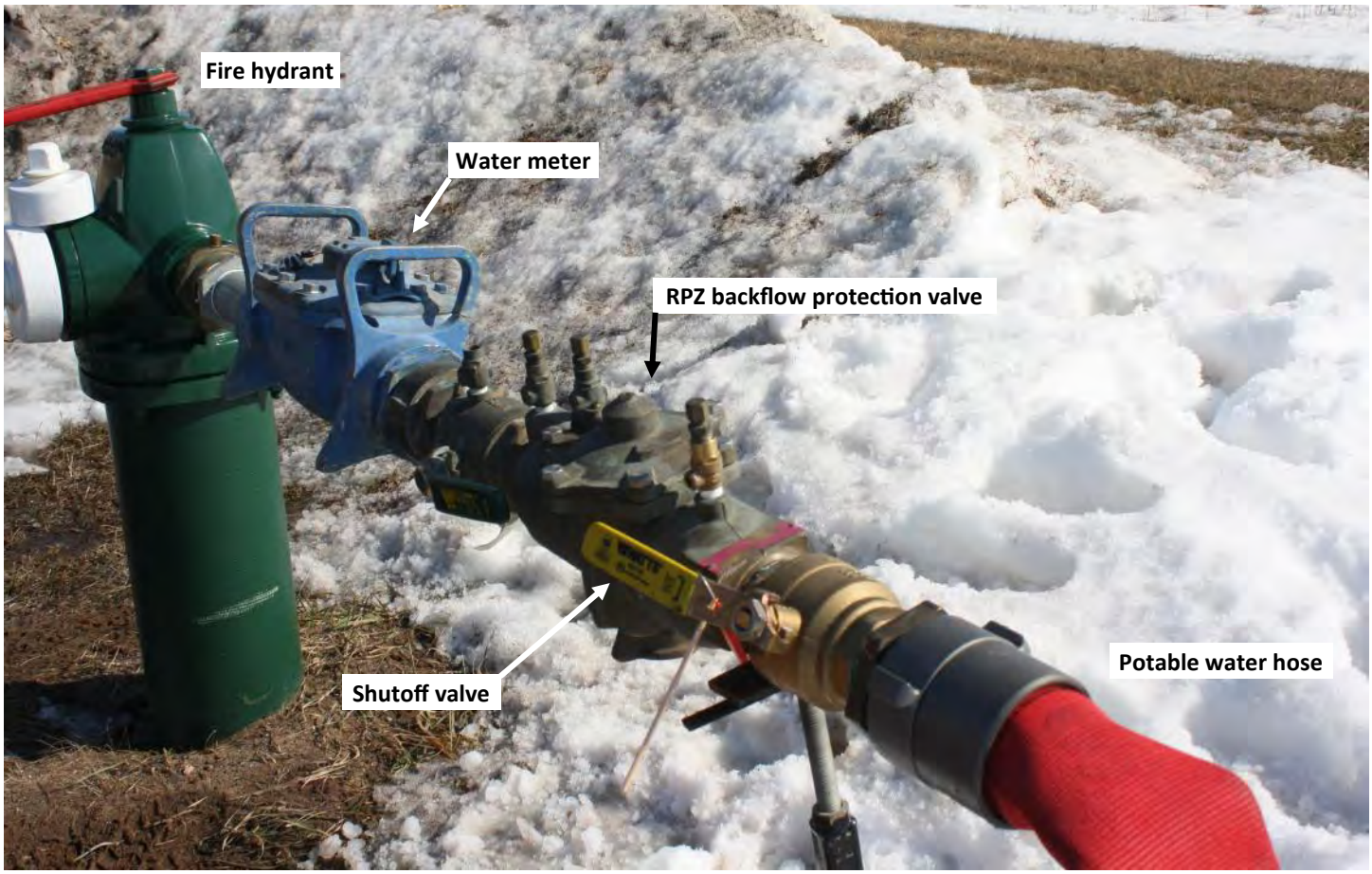
Hooking up—do it right

Once you know where your drinking water will come from, make sure you use the right equipment to make your hookup safe and secure.

Make sure to use hoses that are made from material that is approved for providing potable water.

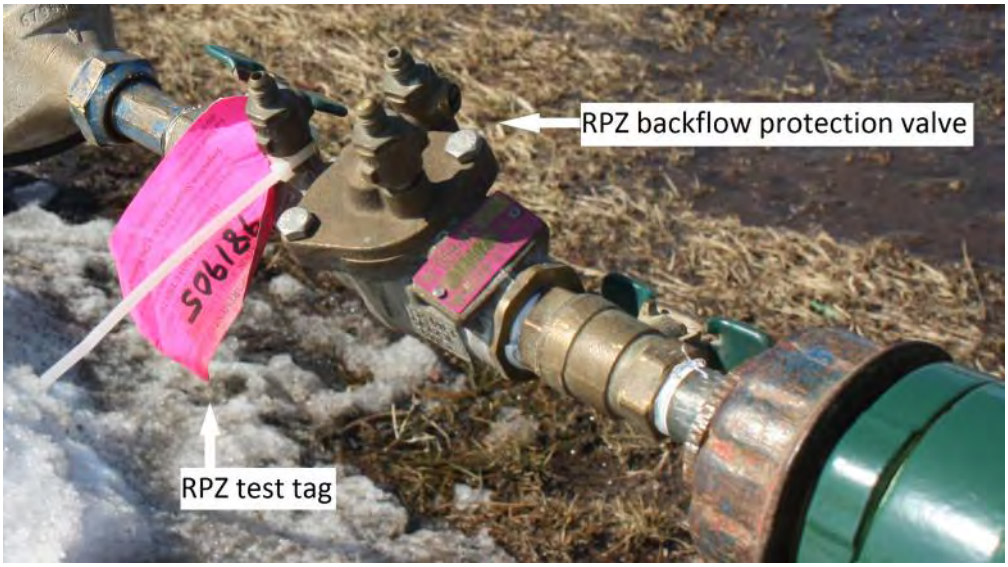
Hoses and water lines—The state plumbing code requires using approved hose and pipe materials. All hoses and water lines suitable for drinking water distribution and delivery should meet certification requirements like NSF 61. Check the table at the end of this fact sheet for more information about approved hose and pipe materials and the requirements. Some other important things to keep in mind include:

- Hoses and water lines for delivering potable water are stamped with the certification number, making it easy to assure that you're using the proper materials.

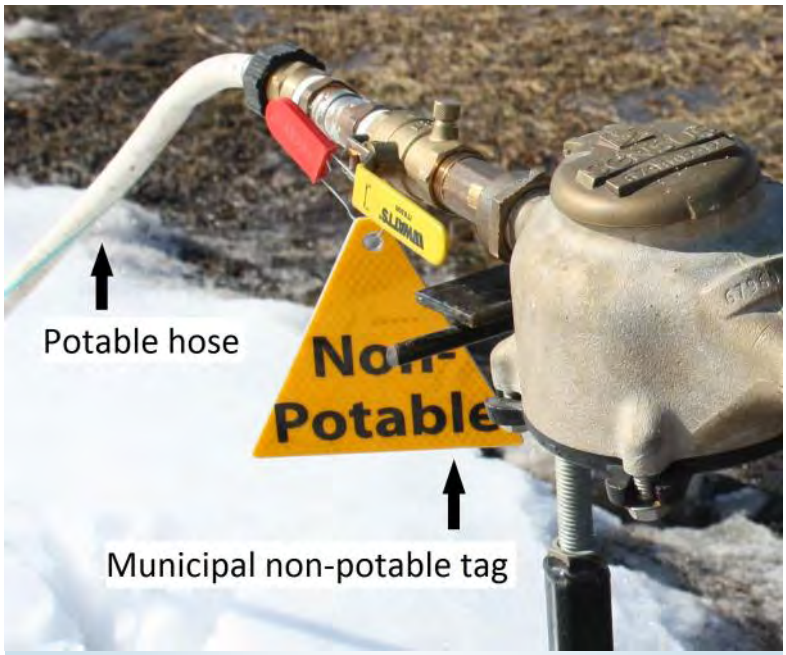


Use the correct materials and hook up your temporary water supply properly, and you will be prepared to deliver safe drinking water throughout your event!

- Hoses and water lines should be made of approved materials that will not break down or leach chemicals into the water. Make sure your lines and valves meet all the requirements.
- Previously used hose should have only been used for potable water conveyance.
- Hoses and lines should be capable of handling the water provider's pressure. Water providers are allowed under law to provide pressure up to 100psi, so you may need to install a pressure reducing valve at the connection point.
- Avoid elevating your hoses too far above the ground (less than 10 feet is recommended) to avoid causing pressure on the temporary lines which could lead to failure.
- Avoid laying hoses and lines in standing water or other liquids.



A backflow protection device, like this reduced pressure zone (RPZ) valve, is a key component for safely hooking up to a fire hydrant. Make sure the device has been tested before beginning to serve water at your event.



The water provider may require posting that the water is considered "non-potable" past the connection point.

What if a festival connection is tagged as "Non-Potable" water?

Some water suppliers prefer to place a "non-potable" tag on a temporary water connection.

- This tag does not mean the water is actually non-potable (that is, not fit for drinking). And a "non-potable" tag does not absolve an event organizer of the duty to provide safe water.
- This tag could cause confusion at your event. Festival-goers who notice a "non-potable" tag may wonder if the water is unsafe and file a complaint with the local health department. A food safety inspector who notices a tag like this on your water supply may limit food vendor services or require proof of potability prior to allowing use.
- To avoid any misunderstandings, plan ahead to address these questions:
  - ✓ Talk with your water supplier in advance about these tags: are they necessary, could alternative language be used, would additional signage be helpful?
  - ✓ Keep a copy of your water sample results on hand during your event, in case an inspector asks to see the information.

Backflow protection—Backflow protection prevents non-potable water, chemicals, or wastes from being siphoned back into the water provider's system. Many water providers will loan valves for this purpose, and the Wisconsin Rural Water Association also has loaner equipment available. If the water provider does not have a valve on hand, another utility nearby may have one available to borrow or lease. Backflow protection devices require testing prior to installation to ensure they are functioning properly. Check the table at the end of this fact sheet for more information about approved backflow protection methods, and visit the DSPS website (dsps.wi.gov/Pages/Professions/CrossConnectionControlTester/Default.aspx) to find listings for licensed testers—called "cross connection control testers"—in your local area.

Proper backflow protection is required for all connections. If a manifold is used, it should be constructed of approved materials and each hose connection should have backflow protection. This ensures that contaminants will not flow into the water before it is used, and chemicals or wastes will not flow back into your piping system or the water provider's water supply.

Disinfection and flushing—Disinfect and flush the hoses and lines before using them. Many water providers disinfect their water to maintain its sanitary quality, so you may not need to disinfect it yourself. If you're using hoses that are not new, disinfecting with common household bleach may be a good idea. You can dilute the bleach and still have enough biocide power for disinfection purposes. Make sure to allow contact with the bleach solution for several minutes.

Keeping it safe—daily operations and maintenance

Ensuring safe water involves more than just setting up a safe connection. Good maintenance and operations practices are important as well.

- Before beginning to use the water connection for your event, contact the local health department to inspect your facilities and test the water. Allow plenty of time to obtain results. Two days at the lab should be sufficient.

Maintaining your connection and all the equipment in good operating condition will allow festival-goers to enjoy safe drinking water throughout your event.

- Avoid turning the water on and off at the connection point during your event. Turning the water off de-pressurizes your water lines and may allow contaminants to enter your temporary water system. If you must turn the line off, flush it out again thoroughly prior to use.
- The temporary distribution system must be maintained in a water tight condition. Inspect your hoses, lines, and backflow protection valves regularly to make sure they are functioning properly.

Conclusions—get more information and help if needed, make sure to follow all requirements, and enjoy your event!

As you organize your event, you may need more detailed information than this fact sheet provides in order to deliver safe drinking water. Check the last page of this fact sheet for some additional details on the requirements and equipment that is approved for drinking water use. Consult with the agencies mentioned in the section called "For more information" and with your local water provider or utility. Some locations may have local ordinances that differ from the state requirements. Also, please keep in mind that water suppliers have heightened legal responsibilities to provide safe drinking water.

Taking care to set up your temporary water system properly and follow all the requirements will allow you to provide safe drinking water and an enjoyable experience for everyone attending your event.

Regulations and Requirements	
Backflow prevention requirements	NR 811.78 (Requirements for the operation and design of community water systems)
	SPS 382.41 (Design, construction, installation, supervision and inspection of plumbing)
Temporary water supply and pressure requirements	NR 810.17 (Requirements for the operation and maintenance of public water systems)
	SPS 382.40 (Water supply systems)
Water meter requirements	NR 810.18 (System loss and unaccounted water)
Prohibition on interfering with fire hydrants	Wisconsin statutes s. 941.12 (Interfering with fire fighting)
Alternative water supply requirements	DHS 196 App 5-104.12, 5-201.11 (Restaurants)
Plumbing code	SPS chapters 381-391
Hoses and water lines (approved materials)	SPS 384 (Plumbing products)—see table 384.30-8, "Water distribution pipe and tubing," for ASSE certification information

Backflow Protection Methods

Backflow protection methods need to be consistent with the degree of hazard present and the limitations of any device used. Methods that are approved by DSPS include:

Reason	Approved method
air gap (for tanker connections)	ASME A112.1.2
pipe vacuum breaker	ASSE 1001
hose thread vacuum breaker	ASSE 1011 or 1052
reduced pressure zone (RPZ) backflow protection valve	ASSE 1013

For more information, contact:

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