

# Banning Bottled Water – Wrong Solution

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**BANNING BOTTLED WATER LIKE BANNING PLASTIC CARRYOUT BAGS IS THE WRONG SOLUTION!**

**BY ANTHONY VAN LEEUWEN**

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The movement to ban bottled water sales in favor of using reusable water bottles filled from the tap is still in its infancy compared to the movement to ban plastic carryout bags and to use reusable shopping bags instead. While only one city has banned the sale of bottled water within city limits, many cities have banned the sale of bottled water on city property including city owned buildings and parks. Some National Parks and some but not all Colleges and Universities have also banned the sale of bottled water in single-use single-serving plastic bottles.

**NOTE:** To learn more about bottled water see the publications titled "[Healthy Drinking Waters for Massachusetts - Frequently Asked Questions About Bottled Water](#)" published by University of Massachusetts Extension or the publication titled "[Water Health Series – Bottled Water Basics](#)" published by the Environmental Protection Agency (EPA). (Healthy Drinking Water for Massachusetts - Frequently Asked Questions About Bottled Water, 2007) (Environmental Protection Agency, 2005)

In this article, we will examine why banning the sale of bottled water in single-serving single-use plastic bottles is not a smart decision. Despite the glowing rhetoric of using refillable water bottles filled with tap water, this solution is not all that it is cracked up to be. While a ban on bottled water sales is similar to a ban on plastic carryout bags, the major difference is that water is consumed by mouth, where taste, not to mention the perception of health risks, becomes the discriminating factor in whether refillable water bottles with tap water are accepted by the public. But even if accepted by the public, the question of whether banning the sales of bottled water in single-serving single-use containers is the right solution, remains.

## Banning Bottled Water Sales

The motivation for banning most bottled water sales stems from the desire to eliminate single-use single-serving or disposable plastic water bottles and to coerce consumers to purchase and use a refillable water bottle and to eliminate the litter associated with bottled water consumption. This is very similar to the ban on plastic carryout bags and the fee on paper bags in order to coerce shoppers into using reusable shopping bags primarily to eliminate the litter associated with using thin-film plastic carryout bags.

## First City To Ban Bottled Water Sales

The City of Concord, Massachusetts has the distinction of being the first city in the United States to ban the sale of bottled water in Poly-Ethylene Terephthalate (PET) bottles of 1 liter or less. Stores found to

be in violation of the bottled water ban will first receive a warning, followed by a \$25 fine for a second violation and \$50 for each subsequent violation. (Environmental Leader, 2013)

The bottled water ban was championed by Ms. Jean Hill, an 84-year old resident of Concord, a city with a population of 18,000, who told the Boston Globe “I hope other towns will follow, I feel bottled water is a waste of money.” The ban was approved by town residents by a vote of 403-364. (Llanos, 2012) Ms. Hill said that inspiration for the campaign came when her grandson told her about a vast floating island of plastic waste in the Pacific Ocean. [NOTE: *There is no floating island of plastic waste in the Pacific Ocean. This is a myth.*] In addition, Hill said “There’s no reason for bottled water. If someone needs to carry water with them, they can use a reusable bottle. If they really insist on buying it, they can go to another town.” (Flowers, 2013)

The ban deprives residents and visitors, to the birthplace of American independence, the right to choose the beverage of their choice. While a soda can be purchased in a plastic bottle, water which is much healthier for you, you cannot! In addition, the ban will deprive the city of much needed sales tax and harm local businesses who depended on bottle water sales to make ends meet. (Llanos, 2012)

Store managers in neighboring Acton, reported an increase in bottled water sales of 20 to 30% with 24-packs and gallons “going like crazy”. They say it is too early to tell if the increased sales are a direct result of the ban on bottled water sales in Concord. (Conti, 2013) (Ball, 2013)

## **San Francisco Banned Bottled Water Sales On City Property**

In San Francisco, on March 4, 2014 the San Francisco Board of Supervisors voted unanimously to ban distribution and sale of plastic water bottles smaller than 21 ounces on city property beginning October 1, 2014. The ban excludes city marathons and other sporting events. According to Supervisor David Chiu, who authored the ordinance, San Francisco is leading the way to fight for the environment and combat climate change. He stated that the fad to drink bottled water only started in the 1990s and for centuries people managed to stay hydrated. (Conger, 2014)

San Francisco’s ban on the sale and distribution of bottled water on city property will become effective on 1 October 2014 and is said to be one of the strictest bans on bottled water in the nation. According to the city, bottled water contributes to massive amounts of litter and plastic waste all over the world and San Francisco has an aggressive plan to achieve zero waste by 2020. (Buczynski, 2014)

Ban violators who are found selling plastic water bottles 21 ounces or less on city property after 1 October will face fines up to \$1000. San Francisco is not the first to ban the sale of bottle water in single-use, single serving plastic water bottles. (Timm, 2014)

The plan will require more drinking fountains and refillable bottle stations to be built or installed on city property. One of the goals would be to promote San Francisco’s Hetch Hetchy reservoir water supply which provides the city’s drinking water. According to Supervisor David Chiu, there are many options available for people to get their water other than from an environmentally wasteful plastic bottle and that filling up a reusable water bottle with Hetch Hetchy water is far cheaper. (Stevenson, 2014) The

Hetch Hetchy reservoir is located in the Yosemite Valley and water is piped 167 miles to San Francisco. (Wikipedia, 2014)

The International Bottled Water Association says that most people will not carry refillable containers with them, and that the bottled water ban actually encourages consumers to turn to sugary drinks with high calories. (Stevenson, 2014)

### **Bottled Water Sales Banned in the Grand Canyon**

National Parks, such as the Grand Canyon have also banned the sale of bottled water. (Timm, 2014) In 2012 the National Park Service implemented a ban on the sale of disposable water bottles. Tourists, who do not bring their own bottled water will be allowed to purchase a reusable or refillable water bottle at concession stands and fill the bottle at free water filling stations. (Hayden, 2012) The new policy only applies to bottled water and visitors can still purchase soda and juice in plastic bottles, as well as bring plastic bottles into the park from other sources. (McKinnon, 2012)

According to former park superintendent, Steve Martin, the new policy should be viewed in the bigger picture of sustainability: "It isn't so much anti-water bottle as it is pro-conservation. There are many parts of the world where bottles are the only way to get good water to people, but when you have a choice to do something better, let's do it." (McKinnon, 2012)

According to park officials, plastic water bottles account for 30 percent of the park's recyclables and 20 percent of the overall waste stream. Park officials said that the plastic bottles have become a serious litter problem along trails on the rim and inside the canyon. Park Superintendent Dave Ueberuaga said that the intent is to "... minimize both the monetary and environmental costs associated with water packaged in disposable containers." (McKinnon, 2012)

The ban on sales of bottled water does not eliminate plastic bottle litter since soda and juice may still be purchased in plastic bottles. In other words, the ban will reduce but not eliminate plastic bottle litter. Perhaps the ban on bottled water sales can be thought about in the same manner as the switch to those green-colored grocery store tote bags: it's nothing more than symbolism. (Hayden, 2012)

While refillable water bottles can be purchased at concession stands and filled with spring water at water filling stations located throughout the park, there are times of the year, particularly after the snow melts, that the water is turbid with dissolved inorganic solids and that there is a slight tint or noticeable cloudiness to the water. Unfortunately, the turbidity cannot be removed by the centrifugal separation process used at the springs. In addition, because these dissolved inorganic solids could provide a medium for microbial growth, chlorine is added to the water. The National Park Service claims that the annual problem with water turbidity is not a health risk and they recognize it poses a perception issue regarding the safety of the spring water. (Marcak, 2012)

### **Colleges and Universities Ban Bottled Water Sales**

More than 90 schools are either banning the sale of or restricting the use of plastic water bottles. Freshman at colleges across the country are being greeted with stainless-steel bottles in their welcome

packs and encouraged to use hydration stations to fill their bottles with free filtered water. (Theen, Ivy Colleges Shunning Bottled Water Jab at \$22 Billion Industry, 2012)

For example, Brown University, used to sell about 320,000 bottles of water in vending machines and campus stores and dining halls. According to Sarah Alexander, “The product just doesn’t make common sense, companies are taking something that is freely accessible to everyone on the Dartmouth campus, packaging it in a non-reusable container and then selling it under the pretense that it is somehow better than tap water.” (Theen, Ivy Colleges Shunning Bottled Water Jab at \$22 Billion Industry, 2012)

In response to the growing movement to ban bottled water sales, the industry has fought back saying that bottle water is safe, convenient, and one of the healthier drinks on the shelf and that its packaging is recyclable. (Theen, Ivy Colleges Shunning Bottled Water Jab at \$22 Billion Industry, 2012)

Some colleges have rejected bans on packaged water. For example, the University of California, Berkeley opted against the idea because it would drive students to consume sweetened beverages. Columbia University did the same after students said that they would buy bottled water elsewhere. (Theen, Ivy Colleges Shunning Bottled Water Jab at \$22 Billion Industry, 2012)

Brown philosophy major Terrence George said “The bottled water ban is downright absurd, I’m buying apple juice and tea every night instead of water. Last time I went to the dentist, I have a few more cavities than usual.” (Theen, Ivy Colleges Shunning Bottled Water Jab at \$22 Billion Industry, 2012)

## **Bottled Water and Emergencies**

### **Portland Oregon Issues Boil Water Order**

The city of Portland Oregon issued a boil water order on 23 May 2014 for the entire city of 670,000 people after state health officials detected coliform and E-coli bacteria in water samples in multiple locations over a period of three days. The Portland Water Bureau issued the order to boil all water used for drinking, food preparation, tooth brushing and ice. (KATU Staff, 2014) The boil water order recommended that tap water should be boiled at a full rolling boil for at least one minute. Existing ice and beverages prepared with un-boiled tap water on or after 20 May 2014 should be discarded. (Botelho, 2014)

The public was advised to consume boiled and bottled water until the Water Bureau can determine that the water system is clean of contamination. Customers will be notified when they no longer have to boil their water. “The chance of any health problems related to this water test result is low. If any problems occur, we would expect diarrhea,” said Dr. Paul Lewis, Interim Tri-County Health Officer. “We monitor cases of bacterial diarrhea and will be aware of any increase following this event.” (Boothroyd III, 2014) (Theen, Portland issues boil water notice for the entire city after E. coli, 2014)

In a matter of hours after the announcement, customers cleared bottled water off supermarket shelves and as word of the boil water notice spread, more and more stores began running out of bottled water and ice. (Paresh, 2014) (Botelho, 2014) (KATU Staff, 2014)

Public schools announced that they would remain open and students and staff would be told not to drink from drinking fountains. A district spokeswoman Christine Miles said **bottled water** would be provided to teachers and students. (KATU Staff, 2014)

The boil water order was lifted the next day and residents were advised to flush out any residual bacteria in pipes for about two minutes. In addition, the Water Bureau plans to flush out two of its open-air reservoirs and to investigate how the bacteria entered the water system. (Paresh, 2014)

## Hurricane Katrina

During Hurricane Katrina the Beverage Industry (i.e. Coca Cola, Pepsi, Seven Up, etc.) shipped more than 100 tractor trailers filled with more than 200,000 cases of bottled water for distribution to hurricane victims. (American Beverage Association) In addition to the beverage industry, bottled water companies received orders from FEMA to ship hundreds of truckloads of bottled water to hurricane Katrina victims. (Nationwide Beverage Bottling Corporation to Speed More Bottled Water to Hurricane Katrina Victims, 2005)

## Hurricane Sandy

Hurricane Sandy impacted many public drinking water systems in New York and surrounding states. Customers were notified that they should boil water to ensure that it is safe to drink. Customers were advised to bring tap water to a rolling boil, boil for one minute, and cool before using. In addition, customers were advised to use boiled or bottled water for drinking, making ice, washing dishes, brushing teeth, and preparing food until further notice. Most of the boil water notices following Hurricane Sandy were rescinded within a week but some remained in effect for as long as a month. (New York State Department of Health, 2012)

The [Federal Emergency Management Agency \(FEMA\)](#) along with state and county emergency management services and emergency relief partners including the [American Red Cross](#) and [AmeriCares](#) along with the [International Bottled Water Association \(IBWA\)](#) and member bottlers coordinated and worked to deliver critical supplies of bottled water to victims of Hurricane Sandy. (Hogan, 2012)

“The bottled water industry has always been at the forefront of relief efforts during natural disasters and other catastrophic events,” said IBWA vice president of communications Chris Hogan. “Throughout the years, bottled water companies have immediately responded to the need for clean water after disasters such as hurricanes, earthquakes, tornados, flooding, and wildfires; or the terrorist attacks on the Pentagon and World Trade Center.” (Hogan, 2012)

What is worse is that FEMA despite its “lean forward” strategy which called for advanced staging of emergency supplies failed to live up to its billing in the immediate aftermath of Hurricane Sandy. In fact, FEMA appears to have been completely unprepared to distribute bottled water to Hurricane Sandy victims when the storm hit. In contrast to its policy, FEMA failed to have any meaningful supplies of bottled water and other needed supplies stored in nearby facilities. (Leahy, 2012)

## Water And Water Quality

Tap water is generally safe to drink in most communities in the United States and is said to meet all federal standards and is considered safe to drink. In contrast, travelers who visit other countries, such as Mexico, have long been warned not to drink tap water because Mexico is well known for its unsafe drinking water resulting in gastrointestinal illnesses or as they say “Montezuma’s revenge.” But travelers also face similar risks of gastrointestinal illness in Central America, most of Africa and Asia, and the Middle East. In these countries, travelers are advised to drink bottled water, other bottled beverages, and heated beverages such as tea and coffee. (Independent Traveler)

## Tap Water

In most developed countries municipal tap water is delivered to homes and businesses via underground pipes. That water is processed and treated to meet drinking water standards. Only about 1% of municipal tap water is used for human consumption and most is used for bathing, watering gardens, cleaning, and cooking. The quality and reliability of municipal tap water varies from one community to the next. (International Bottled Water Association)

The source of water for most communities comes from either wells, lakes, rivers, or reservoirs. Most cities process water at treatment plants where water is tested for compliance with standards set by the Environmental Protection Agency (EPA) before it is piped to residents and businesses. While some groundwater sources may meet EPA standards without treatment, other sources such as lakes, rivers, and reservoirs are subject to storm runoff from land and exposed to the atmosphere whereby they are subjected to contamination. For those water sources, disinfection of municipal drinking water is a necessity and a challenge. (International Bottled Water Association)

Municipal water systems, frequently make the headlines when communities issue boil alert notices. These alerts can occur when a failure in the water system occurs, such as a failure in the treatment system or broken pipes or other contamination of the water supply. Contamination can include toxic metals (lead and arsenic), excessive toxic chemicals, medical pharmaceutical drugs, chemicals used to sanitize water (chlorine, aluminum, copper, and fluoride), and bromine. (International Bottled Water Association)

## Water from Hydration Stations

Not all water hydration or bottle refill stations are created equal. Some bottle refill stations are nothing more than a water fountain with a spigot for filling water bottles with tap water. Other hydration stations are nothing more than drinking fountains that refrigerate and in some cases heat the water dispensed. Other stations include some form of filtering. Filtering can be fairly simple from a carbon filter to remove chlorine to more extensive filter systems employing reverse osmosis or another process. The quality of water dispensed from bottle refill stations will vary depending on the quality of the tap water used and the type of filtering employed.

While water bottling companies carefully control and monitor the taste and quality of bottled water, it remains to be seen whether consumers will choose to drink tap water from hydration stations if the water does not taste as good as bottled water. The quality of water dispensed from hydrations stations will be an important factor in consumer acceptance.

Another factor often overlooked is the shift in financial cost. A person who purchases a bottle of water from a vending machine or a retail outlet pays not only for the water, but also the cost of the bottle and the cost of filtering or processing the water. When bottled water is banned by a public jurisdiction or private organization the consumer pays a nominal fee for a reusable water bottle and the jurisdiction or organization will pay for the cost of the water and the maintenance of bottle refill stations. So instead of earning a profit or collecting a sales tax on the sales of bottled water, the jurisdiction or organization is saddled with the annual cost of providing free water to consumers including the annual cost of maintaining bottle refill stations and replacing filters. **To be specific, the cost drinking water is shifted from the consumer to the jurisdiction or organization.**

## Bottled Water

Companies typically advertise their bottled water as coming from “pure” glacial or mountain spring water sources. In fact, the Food and Drug Administration (FDA) has established a standard identifying several different types of bottled water. **Spring Water** is bottled water derived from an underground formation from which water flows naturally to the surface. **Purified Water** is bottled water that is produced by distillation, deionization, reverse osmosis or other suitable process. **Mineral Water** is bottled water containing not less than 250 parts per million of total dissolved solids. **Sparkling Bottled Water** is bottled water that contains carbon dioxide. **Artesian Water** is bottled water that taps a water bearing underground layer of rock and sand in which the water level stands at some height above the top of the aquifer. **Well Water** is bottled water obtained from a hole bored in the ground which taps an underground water aquifer. (International Bottled Water Association)

People perceive bottled water as being a safer alternative to other sources of water such as tap water. Bottled water usage has increased even in countries where clean tap water is present. (Ferrier, 2001) This may be attributed to consumers disliking the taste of tap water due to the presence of dissolved solids and chlorine. Many consumers choose bottled water for health related reasons. In communities that experience problems with their tap water, bottled water use is significantly higher. (Doria, 2006)

The U.S. Department of Homeland Security in their emergency preparedness guidelines recommends that all households maintain an emergency supply of water for drinking, cooking, and personal hygiene. The recommended amount is 1 gallon per person per day for three days. It is recommended that consumers store bottled water at room temperature, out of direct sunlight and away from solvents and chemicals such as gasoline, paint thinners, and household cleaners. (International Bottled Water Association)

The storage recommendations in the above paragraph are very important, because (1) bottled water exposed to direct sunlight or heat sources may develop algae or mold depending on the quality of the

water and depending on how well the water was disinfected to remove harmful microorganisms; and (2) the plastic from which bottled water and other beverage containers are made is slightly permeable and may allow ambient air gases such as vapors from household solvents, petroleum-based fuels and other chemicals, to affect the taste and odor of the bottled water. (International Bottled Water Association) (Health Canada)

Although, the Food and Drug Administration (FDA) considers bottled water to have an indefinite shelf life, if it is produced and stored in accordance with regulations and guidelines, most manufacturers of bottled water include a shelf life or expiration date on their product. (Steffensen) First, the expiration date is included to ensure that older stocks of water are sold by retailers first; and second, out of concern for the taste and odor of the product itself. (Minnesota Department of Health, 2013)

Bottled water will last indefinitely if the above storage guidelines are followed. Nevertheless, stocks of bottled water at home should be rotated on a regular basis. Some concerns expressed by consumers about plastic migrating into water are addressed as follows:

*“As your bottles sit, there may be some migration of chemicals from the plastic into the water, but FDA spokesman Mike Herndon says the levels are ‘well within the margin of safety.’ You may have heard about [health problems](#) caused by plastic leaching into water from bottles. However, that applies to containers that have a high percentage of polycarbonate (like many of the hard bottles people buy at camping stores to use over and over), not HDPE or PET (polyethylene terephthalate, another popular water bottle plastic).” (Horn, 2007)*

## **Banning Bottled Water Counterproductive**

Whether it is a tsunami, hurricane, tornado, flood, or an earthquake each of these natural disasters has the capacity to disrupt and contaminate local water supplies making these sources of water unsafe for human consumption. In addition, municipal water systems are fragile and prone to failure through accidental or purposeful contamination or contamination as a result of infrastructure failure either due to natural causes or mechanical failure or a combination of both. We have seen that in the event of natural disasters that bottled water is one of the first things that emergency responders provide.

In order for large stocks of bottled water to be available for natural disasters, first responders have the option of stocking emergency supplies of bottled water in regional stockpiles or purchasing bottled water from bottlers and distributors directly when needed. The latter option will provide the freshest supplies. The bottom line is that in order to have large quantities of bottled water available, you have to have a robust and thriving marketplace for this product. **In other words, efforts to ban bottled water are counterproductive and if successful will endanger the public if and when the next natural disaster hits.**

While it is possible to use tanker trucks to carry water in bulk into areas hit by a natural disaster, victims of the disaster have to bring their own containers to carry water away, which is not as ideal as the readymade solution of pre-bottled water. It is much easier for emergency responders to hand out water bottles than for people to stand in line trying to fill their own containers from a spigot.



## Recycling Water Bottles and Beverage Containers

The solution to plastic water bottle litter is not banning the product, but collecting and recycling the plastic container.

Currently there are only 11 states in the U.S. with Container Deposit Legislation or “bottle bills”. Container deposit legislation requires a refundable deposit on certain types of recyclable beverage containers in order to ensure an increased recycling rate. Studies show that beverage container legislation has reduced total roadside litter by between 30% and 64% in the states with bottle bills. (Container Recycling Institute, 2013) Studies also show that the recycling rate for beverage containers is vastly increased with a bottle bill. The United States’ overall beverage container recycling rate is approximately 33%, while states with container deposit laws have a 70% average rate of beverage container recycling. (Container Recycling Institute Staff, 2003)

In California, consumers pay the California Redemption Value (CRV) when they purchase bottled water from a retailer, and receive CRV refunds when they redeem the containers at a recycling center. The CRV is 5 cents for each beverage container less than 24 ounces and 10 cents for each container 24 ounces or greater. The overall recycling rate for calendar year 2013 was 85 percent, and 74% of all PET beverage containers were recycled including plastic water bottles and soft drink bottles of every type and size. (CalRecycle)

Furthermore, water bottles and beverage containers made from PET are extremely valuable. Depending on the type and condition, recycled flakes of PET go for around \$800 per ton. That means it has a robust market in the U.S. and overseas. In fact, PET bottles are much easier and more profitable to recycle than the other plastic, cardboard, or paper containers. (Minter, 2014)

## Conclusion

Bottled water is an essential item for distribution to victims of natural disasters or in cases where local water supplies become contaminated. To be able to have fresh stocks of bottled water available in the event of an emergency you have to have a robust and thriving marketplace for this product. In addition, distributing bottled water in emergencies is more efficient than bulk deliveries of water via tanker truck.

The solution to water bottle litter is for the other 39 states to adopt bottle bills, and by placing a redemption value on plastic water and beverage bottles, create an economic incentive that will ensure that more of these bottles are recycled rather than disposed of in the trash or littered.

In addition, since drinking bottled water is healthier than drinking sugary beverages, banning bottled water sales in single-serving single-use plastic bottles is counterproductive to good health.

Communities and organizations that ban sales of bottled water no longer collect profits from the sale of these beverages and incur the expense of providing free water through bottle refill stations and the maintenance of refill stations including regular filter replacement.

Furthermore, taste is the discriminating factor that will determine if consumers accept and adopt using refillable bottles and tap water from bottle refill stations or keep using bottled water. Since most bottle refill stations only use a carbon filter, depending on the quality of local tap water, acceptance by consumers is questionable.

**Banning the sale of bottled water in single-serving single-use plastic bottles is counterproductive and bad public policy.**

## About the Authors

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