

“Why the use of filtered tap water should be preferred and encouraged over plastic bottled water within the council buildings when filtered tap water is available.”



Notice of Motion.

‘That the use of filtered tap water be preferred and encouraged over plastic bottled water within the council buildings when filtered tap water is available.’

Background

Bottled Water

Why have bottled water when filtered water is available?

“Why the use of filtered tap water should be preferred and encouraged over plastic bottled water within the council buildings when filtered tap water is available?”

SUMMARY

We could save \$\$\$\$ and thousands of plastic drink bottles. Plastic bottled water containers are a serious



“Why the use of filtered tap water should be preferred and encouraged over plastic bottled water within the council buildings when filtered tap water is available.”

environmental problem as they are around for 450 years. By having filtered tap water at Council meetings we provide leadership starting with our individual example. We will also reduce costs to our ratepayers.

1. Recycling is claimed to be high in SA, but that leaves 110 million drink containers as litter!
2. Recycling is environmentally expensive, 66% of the energy costs of a new container for just processing, and that ignores the transport fuel used!
3. Bottled water is not as good as Adelaide tap water..... E.g. increased tooth decay in South Australia as bottled water consumption increases.
4. Financial Cost. Bottled water in small bottles like we have in Council meetings cost \$3.00 a litre compared to \$0.004 or less than ½ cent per litre for tap water.

This motion is limited in scope and makes a meaningful change.

The research in the following discussion is drawn from the web and sources are provided in the electronic links. I believe the new Council should return to this issue to explore other options available to encourage the use of tap water. However with just two months left in the life of this Council the motion encouraging a change in our own meetings is one we can and should pass now.

In my time on council we have had over 16 bottles of bottled water per meeting when the filtered water tap is closer, glasses are available and we could have glass bottles like we do at home, filled with filtered water and in the Fridge, when you use some, you fill it up and put it back into the fridge. Over the term of this Council we have had about 160 meetings and briefings using over 2,500 bottles of bottled water.

Who is banning bottled water?

The small town of Bundanoonⁱ, New South Wales (Australia) enacted such a ban in 2009 and was the first town to do so anywhere. For the record, America’s National parks are not the only people to ban plastic water bottle sales. Two weeks ago, UK supermarket chain Selfridges stopped selling them. The entire city of San Franciscoⁱⁱ announced in March plans to phase them out within four years.

Are Bottles from Bottled water recycled?

The short answer is almost no. The short reason is cosmetic (recycled bottles are cloudy), the chemistry of the plastic limits the plastic’s ability to be recycled, and the amount of energy used to achieve recycling is very high.

The plastic water bottles in the Council Chamber at our last Council meeting were from the Coca-Cola Company. If you consider every plastic water, or juice bottle you've ever used, you might assume that because the label says it's a *recyclable* bottle that the bottle itself is made of recycled plastic too. But this is hardly ever true. Coca-Cola sources just 7% of its plastic from recycled materialⁱⁱⁱ

Although most bottles are able to be reused or recycled, most plastic bottles that are currently produced are made from virgin polyethylene terephthalate (PET).^{iv} The plastic is comprised of non-renewable fossil fuels, which are a finite resource, and the use of this product encourages mining which has associated environmental impacts.^v

Plastic drinking bottles could be made out of 100% recycled plastic, known as RPet – and campaigners are pressing big drinks’ companies to radically increase the amount of recycled plastic

“Why the use of filtered tap water should be preferred and encouraged over plastic bottled water within the council buildings when filtered tap water is available.”

in their bottles. But brands are hostile to using Pet for cosmetic reasons because they want their products in shiny, clear plastic, according to Steve Morgan, of Recoup in the UK.^{vi}

An ongoing conundrum with bottled water use is improper and ineffective recycling of water bottles. Plastic bottles were one of the ten most common items picked up on [Clean up Australia Day](#) in 2014. Once these bottles are in the environment, they can take up to [450 years](#) to biodegrade. There is a prevalent belief that the environmental impacts of bottled water production and consumption are mitigated through recycling practices.^{vii} However, when recycling is appropriately undertaken it only saves [1/3](#) of the energy in the production stage. Additionally, the [quality](#) of the plastic degrades each time it is recycled, thus limiting the quantity of times plastic can be recycled. Therefore, reducing your bottled water consumption by using your own durable bottle is the preferred option for you, your back pocket, and the environment.

In South Australia because of our highly successful container deposit scheme we have “only” 110,000,000 drink containers which are not recycled each year.^{viii} This is still a lot and a problem that could be avoided.

Is bottled water Safe?

From Queensland University

There is a growing body of evidence to suggest that bottled water can have detrimental effects on human health. One study found that many brands of bottled water were deficient of essential minerals such as magnesium, potassium and calcium.^{ix} Another study found that 20% of the bottled water samples had concentrations of chlorine, fluoride, nitrate and other harmful compounds that exceeded the World Health Organisation guidelines.^x Additional studies found that the bacteriological quality of tap water was greater than bottled mineral water.^{xi} There are other [health concerns](#) related to bottled water due to harmful chemicals released from the bottle, such as bisphenol A (BPA).

BPA has been linked to breast cancer, among other health conditions.^{6xii} In Australia the [bottled water guidelines](#) are of a lower standard than the [Australian Drinking Water Guidelines](#). The chemicals used in the production and consumption of bottled water also have follow-on environmental effects.

Use of bottled water has increased over the past few decades. Some contributing factors to this increase is information from the media, sensory perception, risk perception, and sociocultural, psychological and economic reasons.^{xiii} There is a common perception that bottled water is healthier, more convenient and tastier than tap water.^{xiv} This article highlights the impacts of bottled water consumption, using the sustainability framework.

Financial cost of bottled water

Of the three pillars of sustainability, the economic impacts of bottled water are perhaps the most evident to the consumer. Tap water is approximately [\\$3](#) per 1000 litres, comparatively to bottled water, which is approximately [\\$3](#) per litre. Unfortunately the costs expand on economic concerns, and have detrimental social and environmental effects.

The environmental effects of bottled water use are extensive.

“Why the use of filtered tap water should be preferred and encouraged over plastic bottled water within the council buildings when filtered tap water is available.”

There is a large consumption of energy in capturing the water, conveying the water and also in the treatment of the water at the bottling plant. Additional energy consumption occurs in producing the bottle, and in cleaning, filling, sealing, labelling and refrigerating the bottles. Lastly, energy is required to transport the bottle to retailers, and then to the consumer.^{xv} The total energy required in the production of bottled water is 5.6-10.2 MJ per litre, comparatively to tap water, which typically requires 0.005 MJ per litre in treatment and distribution.^{xvi}

Energy and fossil fuels aren't the only resources that are utilised in the production of bottled water. The production of bottled water consumes additional water for the manufacturing process. More than 6 litres are required to produce and cool 1.5 litres of bottled water.^{xvii} Additionally, [spring water](#) for bottled water in Australia is sourced from underground aquifers. [This](#) can impact on farmers, and may lower the water table, which could have considerable social and environmental ramifications.

Mrs Terrie-Ann Johnson is CEO of Clean Up Australia.

Her clean-up crew pulls squillions of plastic water bottles out of waterways each year, and she says plastic bottles are just about the worst thing imaginable for the environment.

“A single use plastic bottle is made out of oil, so that's a really poor use of a finite resource,” she said.

“They can be transported up to four times before you buy it, generally by truck, and then you go buy another one.

“Less than 30 per cent of plastic bottles are recycled in most states.”

“A lot of people think they do their bit by refilling bottles, but those bottles are designed for single use. They've got PCBs [Polychlorinated Biphenyls] which are not good for you.”^{xviii}

PCBs are not good for anyone. They have even been discovered in plankton, which means they infiltrate the entire marine food chain. In short, plastic bottles make nobody healthy.

And in terms of price, there's an old line about bottled water being twice as expensive as petrol per litre, which is true when it's purchased in small quantities.

There's also the not trivial fact that tooth decay is rising among younger Australians, which health experts say is due to people drinking bottled water instead of tap water, which contains fluoride.^{xix}

Who is banning bottled water?

For the record, America's National parks are not the only people to ban plastic water bottle sales. Two weeks ago, UK supermarket chain Selfridges stopped selling them. The entire city of San Francisco announced in March plans to phase them out within four years. So far, Big Water lobbyists haven't been able to overturn that one.

The small town of Bundanoon^{xx}, New South Wales (Australia) enacted such a ban in 2009 and was the first town to do so anywhere.[1] The University of Vermont (UVM) in Burlington became the first public college to enact such a ban. As of late 2016, 82 high schools, colleges and universities across the world have implemented bottled water bans on their campuses.[2] Municipalities have also banned bottled water from their facilities, such as the city of San Francisco, California.[3]

Conclusion

It would be good for the residents, our employees, as well as our ratepayers if Unley Council passes a motions reducing the consumption of bottled water in Council buildings.

“Why the use of filtered tap water should be preferred and encouraged over plastic bottled water within the council buildings when filtered tap water is available.”

ⁱ https://en.wikipedia.org/wiki/Bottled_water_ban

ⁱⁱ <https://www.theguardian.com/environment/2017/jun/28/how-san-francisco-is-leading-the-way-out-of-bottled-water-culture>

ⁱⁱⁱ <https://www.cNBC.com/2017/04/24/almost-no-plastic-bottles-get-recycled-into-new-bottles.html>

^{iv} Gleick, PH and Cooley, HS 2009, ‘Energy Implications of Bottled Water’, Environmental Research Letters, vol. 4.

^v Hawkins, G 2011, ‘Packaging water: plastic bottles as market and public devices’, Economy and Society, vol. 40, no. 4, pp. 534-52.

^{vi} <https://www.theguardian.com/environment/2017/jun/28/a-million-a-minute-worlds-plastic-bottle-binge-as-dangerous-as-climate-change>

^{vii} ¹² Saylor et al. 2011

^{viii} "We've got the lowest percentage of drink containers in our litter scheme of the whole country, I think it's about 2.9 per cent and we're recycling and diverting from landfill about 80 per cent of our waste right across the board," Mr Hunter said. About 580 million drink containers are recycled in the state every year <http://www.abc.net.au/news/2017-01-01/sa-container-deposit-scheme-leading-nation-for-40-years/8156298>

^{ix} Mahajan, RK, Walia, TPS, Lark, BS and Sumanjit 2006, ‘Analysis of physical and chemical parameters of bottled drinking water’, International Journal of Environmental Health Research, vol. 16, iss. 2, pp. 89-98.

^x Cidu, R, Frau, F and Tore, P 2011, ‘Drinking water quality: Comparing inorganic components in bottled water and Italian tap water’, Journal of Food Composition and Analysis, vol. 24, pp. 184-93.

^{xi} da Silva, MEZ, Santana, RG, Guilhermetti, M, Filho, IC, Endo, EH, Ueda-Nakamura, T, Nakamura, CV and Filho, BPD 2008, ‘Comparison of the bacteriological quality of tap water and bottled mineral water’, International Journal of Hygiene and Environmental Health, vol. 211, pp. 504-9.

^{xii} Yang, M, Ryu, JH, Jeon, R, Kang, D and Yoo, KY 2009, ‘Effects of bisphenol A on breast cancer and its risk factors’, Archives of Toxicology, vol. 83, pp. 281-5.

^{xiii} McLeod, L, Bharadway, L and Waldner, C 2014, 'Risk Factors Associated with the Choice to Drink Bottled Water and Tap Water in Rural Saskatchewan.

^{xiv} Saylor, A, Prokopy, LS and Amberg, S 2011, ‘What’s Wrong with the Tap? Examining Perceptions of Tap Water and Bottled Water at Purdue University’, Environmental Management, vol. 48, pp. 588-601.

^{xv} ⁹ Yang et al. 2009

^{xvi} Yang et al. 2009

^{xvii} Niccolucci, V, Botto, S, Rugani, B, Nicolardi, V, Bastianoni, S and Gaggi, C 2011, ‘The real water consumption behind drinking water: The case of Italy’, Journal of Environmental Management, vol. 92, pp. 2611-18.

^{xviii} <https://www.news.com.au/lifestyle/food/drink/plastic-water-bottles-bad-for-environment-but-beverage-makers-want-us-to-buy-more/news-story/90476f5a42a915958fd65741d48db45>

^{xix} Ibid <https://www.news.com.au/lifestyle/food/drink/plastic-water-bottles-bad-for-environment-but-beverage-makers-want-us-to-buy-more/news-story/90476f5a42a915958fd65741d48db45>

^{xx} https://en.wikipedia.org/wiki/Bottled_water_ban