

Shifting To Sustainable Drinking Water Consumption At UBC: A Social Marketing Plan

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SHIFTING TO SUSTAINABLE DRINKING WATER CONSUMPTION AT UBC:

A SOCIAL MARKETING PLAN



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DECEMBER 2010**

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EXECUTIVE SUMMARY

The sustainability of water consumption is one of today's urgent issues. Particularly troublesome is the production and consumption of bottled water; that is, water sold in disposable plastic bottles. Bottled water takes up more resources than it actually provides, contributes to climate change, clogs up landfills, contaminates wildlife, and leeches dangerous toxins into the water we drink. The University of British Columbia campus has access to some of the best quality water in the world, water that flows from taps practically free of charge. UBC currently earns more than \$300,000 from the sales of 170,000 bottled water units, which contributes approximately 16,300 kg of CO₂ equivalents emitted in the atmosphere every year. To meet the university's sustainability targets, which include reducing greenhouse gas emissions of the campus by 100% by 2050, bottled water will need to be phased out from campus.

Shifting UBC to a bottled water free campus is not only appropriate, but also timely for a number of reasons. More quality water fountains have already been installed on campus in recent years; fewer people are buying bottled water; there is student capacity to run awareness campaigns; and encouraging a culture in which everyone carries their own bottle is a stepping stone to more sustainable drinking and eating practices in the future. Furthermore, the food services organizations that sell bottled water on campus - AMS Food Services and UBC Food Services - are supportive of this initiative. Nancy TooGood, Food and Beverages Manager of AMS Food Services, and Loriann McGowan, General Manager of UBC Food Services, both served as the staff supervisors of this project and will continue to be active stakeholders moving forward.

The purpose of this paper is to equip a student team with the knowledge, tools and ideas for the social marketing of sustainable drinking water consumption to students and others on campus at the University of British Columbia over the period of January 2011 to April 2012. However, work on this project may continue beyond April 2012. **The ultimate goals are to (1) cease sales of plastic bottled water and (2) improve water fountain drinking infrastructure so that tap water is widely available and accessible on campus by September 2014.** This date has been chosen in consideration of allowing adequate time to achieve both goals, and is approximately when the new Student Union Building is planned to be open for use.

The term "social marketing" is used here because it depicts the nature of the bottled water free campus project, which seeks to create behavior change for the wider good of society, and not for profit. Our marketing plan outlines actions to establish long-term education and engagement campaigns to foster sustainable drinking water practices in campus culture. Key leverage points in the plan include participating in the Sustainability Office's Waste and Water Plan Consultations early February 2011, launching an awareness and engagement campaign on the first day of the next academic year (Imagine Day 2011 in September) and incorporating sustainable drinking water practices into the orientations for new students.

In addition to the action plan, this paper includes the following tools and resources:

- A brief history of bottled water and water fountain initiatives at UBC;
- Information on the negative impacts of bottled water;
- Information on local tap water quality;
- A brief account of other Canadian campuses doing similar work; and
- A detailed report of a survey of UBC student preferences and opinions for drinking water.

The survey, “Drinking Water at UBC”, comprises the main component of this paper’s background market research and was created to help inform decision-making for future campaigns and infrastructural development. A total of 534 people participated in the surveys, 153 of whom completed the online version, and 381 of whom were surveyed in-person at various strategic locations on campus.

Out of all the responses, the following major trends were observed:

- Students do not think water fountains are widely available on campus, and want more that are easy to use and well-maintained
- Hygiene is a major barrier for those who do not drink from a water fountain
- Most students like WaterFillz stations
- While many students trust campus tap water, there are still many who do not understand where the water comes from and whether it is safe to drink
- Most students are supportive of banning the sales of bottled water
- Most students use a personal water bottle
- Students prefer to drink cold, fresh-tasting water

Assuming these trends hold true for all UBC students, there are two overall conclusions that can be drawn:

1) Overall, there is student support for more sustainable drinking water consumption on campus; and

2) In order to facilitate the shift to sustainable drinking water consumption, effective awareness programs will need to be developed in addition to the improvement of drinking water infrastructure.

While this project has completed much groundwork, a decision still needs to be made on whether UBC should distribute campus-wide branded water bottles, research needs to be done to determine best locations for new water fountains as well as the best water fountains for those locations, and, of course, the action plan outlined in this report needs to be implemented. Angela Willock will be leading further work, with support from Rosalind Sadowski from afar. It’s time to take back the tap!

BACKGROUND INFORMATION

About Us, the Authors

Rosalind and I (Angela) are both third year students studying sustainability issues in the Global Resource Systems Program of the Faculty of Land and Food Systems. Both of us are student activists and have both played a leadership role in Tangible Solutions, the student group out of which the bottled water initiative was birthed and developed over the last three years. Tangible Solutions is a subgroup of Common Energy, a student-run climate action group. Both of us intend to continue working on this project and oversee the implementation of the ideas we have outlined in this report, though in different ways at different times. Rosalind will be leaving to study for eight months in Copenhagen starting January 2011, but will continue to support efforts on the ground from afar, and rejoin the action when she returns in September 2011. I will be continuing work on this project through her absence, but hope to have other students involved in the near and far future. I have been involved in this issue for two years now, and will soon want to open up my time to explore other projects. That being said, both Rosalind and I will want to see this project through as far as we can. As we have made clear in this paper, we believe the time is ripe for UBC to become bottled water free.

Overall Timeline and Project Context

Below is a diagram of the overall timeline of the initiative to make UBC a bottled water free campus by September 2014. This project and paper specifically addresses Step 2 and 3, during the span of September to December 2010. Please note that these steps are not temporally exclusive; that is, beginning and ending at the times indicated in the diagram. All steps are ongoing and are continually developed throughout the whole timeline. They have been categorized as such in the diagram to help conceptualize where the bulk of each activity takes place, and how - in integrative continuity - they will bring about the change we seek.



DRINKING WATER AT UBC:

Who's Who and What's What

The Bottled Water Industry in Canada

There is an immense amount of information on the bottled water industry both here in British Columbia and Canada, as well as internationally. To capture the key aspects of the industry, we have compiled a reel of information from various sources below.

The following facts were pulled directly from Metro Vancouver's website and highlight various environmental sustainability issues with plastic disposable bottled water:

- Last year, an estimated three million plastic water bottles ended up in the **garbage**. Those bottles could have been returned to recycling depots.
- Most single-use PET plastic bottles are not recycled into new plastic water bottles. The vast majority of them are down-cycled into other products. This means they can only be used in a degraded form for components other than their original use. White writing paper, for example, is often down-cycled into materials such as cardboard and cannot be used to create more premium writing paper.
- About 20% of the plastic going into a typical plastic recycling plant comes out the other end as garbage that Metro Vancouver has to bury or burn.
- New single-use plastic bottles have to be made of non-renewable resources.
- New bottles containing plant material are not biodegradable. They are made from PET plastic, 70% of which was made from non-renewable fossil fuels, and up to 30% of which was made from plant-derived sources. There is no real difference between PET that is made from crude oil vs. PET that is made from plants.
- According to many international tap water campaigns, the total amount of energy embedded in our use of bottled water can be as high as the equivalent of filling a plastic bottle one quarter full with oil. It takes more water to produce that bottle than the bottle holds.

The following four diagrams are from Sean Griffin's report, "The toxic footprint of PET-bottled water in British Columbia", for Toxic Free Canada:

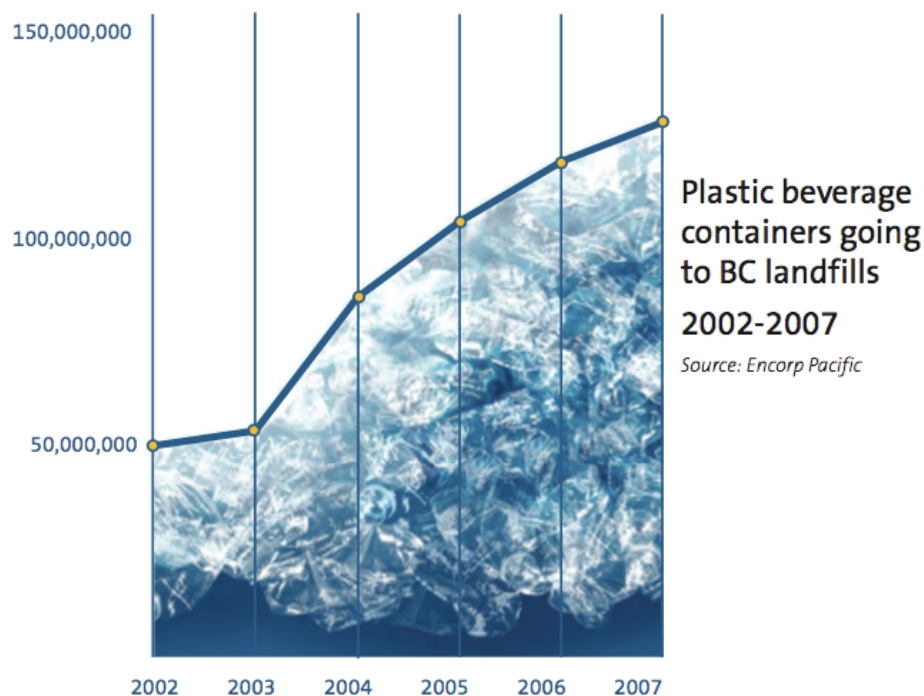
Manufacturing a 20.3g PET plastic water bottle generates almost four times the bottle's weight in greenhouse gases. Producing PET bottles of water sold in BC in 2007 and transporting them to market generated between 12,922,578 and 16,766,604 kg of greenhouse gases (CO₂e). That's the amount that would be generated in heating the average Canadian home for the next 2,177 years.



Company	Share	# of bottles	Distance
Nestlé	37%	46,791,615–60,659,127	150 km (Hope)
Dasani	14%	17,704,935–22,952,102	30 km (Coquitlam)
Aquafina	16%	20,234,212–26,230,974	27 km (Delta)
Others, local	28%	35,409,870–45,904,204	14 km (Richmond, Bby)
Int'l, France	4.5%	5,690,872–7,377,461	5343 sea; 4903 rail
Int'l, Fiji	0.5%	632,319–819,719	9446 sea

This diagram illustrates the varying impacts of each bottled water distributor in relation to # of bottles distributed and estimated transportation distance of bottles from the company's bottling plant to Vancouver.

Encorp Pacific annual recycling reports show that 130,485,768 plastic bottles ended up in B.C. landfills in 2007 alone. Of those between 34.5 million and 44.8 million were discarded water bottles. The 44.8 million bottles would be enough to fill 21,833 full-size pickup trucks.



From the University of Toronto's Student Union Website:

INSIDE THE BOTTLE: An expose on the bottled water industry by the Polaris Institute has shown the major corporate players in this industry to be guilty of irresponsible and dangerous corporate practices that manipulate consumers, degrade the environment and threaten the public's right to water. Take a close look at these three troublesome areas inside the bottle:

1. Consumer Manipulation

Price Gauging

Bottled water is 240 - 10,000 times more expensive than tap water - even though more than 25% of bottled water originates from municipal tap water systems.

Transforming Water

Bottled water is a product based on a clever ruse - it is quite simply water transformed into water. As a former executive of Perrier once remarked: "It struck me...that all you had to do is take the water out of the ground and then sell it for more than the price of wine, milk, or for that matter, oil."

Marketing Schemes

Bottled water cartels like to suggest that tap water is inferior, yet NYC's water is tested more than 400,000 times/year and the City of Toronto tests its water quality every 4 hours. Meanwhile, bottled water plants receive government inspections once every 3-6 years!

2. Environmental Degradation

Contaminated Water

Arsenic, mercury and bromides have been found in bottled water.

Recycling Record

Bottled water corporations undermine community recycling efforts by funding opposition to bottle bills and tougher recycling rules. The industry often outspends recycling proponents by as much as 30 to 1.

Eco-Threatening

Plastic bottles release highly dangerous toxic chemicals and contaminants into the air and water when they are manufactured. And these containers are the fastest growing form of municipal solid waste in the U.S. and Canada.

3. Corporate Control

Water Privatization

Public water systems are bottled water's biggest competitors. And the expanding bottled water market erodes people's confidence in their public water systems, paving the way for higher prices and corporate control of our water resources.

Water Takings

Bottled water corporations use their political influence and economic might to take water resources from communities.

School Contracting

Across the U.S. and Canada, there are a growing number of schools, universities and colleges signing exclusive beverage contracts with cola kings Coke and Pepsi. Both corporations are major players in the bottled water market and are pushing these products aggressively in schools in hopes of turning students into life-long consumers.

The Bottled Water Industry at UBC

The bottled water industry at UBC generates more than \$350,000 in annual revenue from the sales of more than 170,000 bottled water units (see Appendix A). According to Toxic Free Canada's report on the toxic footprint of bottled water, a lifecycle analysis conducted by Franklin Associates provides a figure of 961 kg of carbon dioxide equivalents (CO₂e) per 10,000 bottles for the cradle to fabrication phase of PET (polyethylene terephthalate; a type of plastic). This would mean that UBC emits 16,337 kg CO₂e a year from the sales of bottled water, which is equivalent to eating around 2500 hamburgers, assuming the carbon footprint of one hamburger is at least 6 kg CO₂e.

The two main suppliers of bottled water on campus are UBC Food Services and AMS Food Services, who sell the product through catering, vending machines and food outlets. UBC Food Services currently has 30 food venues on campus (Student Housing and Hospitality Services, 2010) and sells Coca-Cola's Dasani bottled water at all these venues except at Starbucks locations, where Starbucks' Ethos bottled water is sold. AMS Food Services has 11 food venues (UBC Alma Mater Society, 2010) and sells Pepsi's Aquafina and Nestlé Pure Life Water. Both food services have non-exclusivity contracts with their respective bottled water supplier. UBC Athletics, another bottled water provider on campus, also has a non-exclusive contract with Coca Cola, which was contracted in conjunction with UBC Food Services' contract (Ubysey, 2010).

From UBC Insider's article, "Policy 116: Coca Cola and the Freedom of UBC's Information":

Although UBC will say they've gotten out of the business of exclusivity contracts, their relationship with Coca-Cola never ended. A new "non-exclusive product supplier agreement" between Coca-Cola, UBC Athletics and UBC Food Services was ratified by BoG [Board of Governors] at their April 2010 meeting, worth \$6.665M over 10 years. (How nice of Coca-Cola to also give UBC a meaningless sustainability award shortly before it was approved.)

The strong presence of Coca Cola on campus extends further back into history. In 2005, Sean Cook and Stephen Petrina published an article that illustrates the commercialization of water on campus. The evidence for this thesis highlights the effects of the exclusivity contract with Coca Cola, in terms of the proliferation of vending machines and the removal of 44% of water fountains on campus before 1999.



© Sean Cook, 2004

Presently, both AMS and UBC Food Services would cease sales of bottled water given appropriate circumstances. The AMS supports phasing out the sales of bottled water; however, this will not be done unless UBC Food Services follows suit. Otherwise, the AMS Food Services would be at a competitive disadvantage and lose business.

UBC Food Services is also pro-sustainability and has already undertaken successful efforts to shift their business practices, including providing compostable plates, take-out containers and cutlery. In addition, UBC Food Services has expressed support for awareness and education programs to reduce demand for bottled water, including removing bottled water from shelves on Bottled Water Free Day, March 11, 2010.

However, considering UBC Food Services is a self-auxiliary organization that earns an annual revenue of over \$300,000 from the sales of plastic bottled water, it is currently unfavorable to halt sales of this product. As stated in a response letter from UBC's VP Finance Pierre Ouillet to an inquiry from CUPE 116, current sales of bottled water are equivalent to "4.5 full time food services positions from a gross margin perspective" (see Appendix A). Knowing that bottled water sales will eventually be ceased, UBC Food Services intends to replace bottled water with other bottled drinks in vending machines, the sales of which would likely increase with the disappearance of bottled water availability at commercial outlets.

Independent of efforts by either Food Service, it would appear as though demand for the product may already be declining. In September 2010, AMS Food Services saw a 50% decrease in bottled water sales as compared to September 2009. However, while these numbers are perhaps encouraging, it has proven difficult to obtain the sales numbers from Coca-Cola for October and November. Furthermore, no similar statistics are available for UBC Food Services. Until all of these figures are made available, it is impossible to determine whether this drop represents a concrete and consistent trend in consumer drinking water preferences.

Following are possible explanations for the decline:

- Introduction of two WaterFillz machines in the Student Union Building (SUB)
- Installation of more water fountains both in the SUB as well as in a few other buildings across campus, some of which have a faucet to fill water bottles
- Free distribution of an AMS-branded bottle at start of the school year
- Awareness about plastic, water and general waste issues has become more widespread over the last few years, due to more prominent media coverage (see section below), anti-plastic, anti-corporation campaigns and other sustainability-related campaigns
- The market for personal water bottles has greatly expanded, with a number of different styles and sizes available
- Owning a personal water bottle is increasingly considered a "must-have" item in terms of living sustainably, similar to using reusable cloth bags
- Increased price of disposable bottled water over the years due to inflation

The Other Drinking Water Players at UBC

The Alma Mater Society (AMS)

The AMS is a critical stakeholder in this project for a number of reasons:

1. The student administration includes a Sustainability Coordinator (currently Justin Ritchie) who coordinates and oversees implementation of the AMS Lighter Footprint Strategy, and who provides resources and feedback for the sustainable drinking water initiative. Justin has been a particularly valuable advocate for new hydration stations, such as the WaterFillz machines, and is very knowledgeable in this regard.
2. The VP Administration (currently Ekaterina Dovjenko), who is responsible for the operations of the Student Union Building (SUB) and planning for the New SUB (which is scheduled to be completed by 2014), could have important influence over how water is provided/marketed in the AMS' future.
3. The AMS also includes an 'Impacts Committee', comprised of people concerned with sustainability who also help implement the Lighter Footprint Strategy, including the Sustainability Coordinator, the AMS Food and Beverages Manager, a Student Environment Centre representative and a few others. The committee could help leverage some of the promotional materials/activities or provide feedback on various initiatives.
4. The council has potential influence in its ability to pass motions and hold referendums. The council could pass a motion in support of a ban on bottled water, more water fountains, or something similar.
5. The AMS president could rally the Board of Governors to support a ban on bottled water on behalf of students.
6. The AMS could create new "sustainability-oriented" volunteer positions responsible for coordinating several aspects of the bottled water free campaign.

University Sustainability Initiative (USI)

The University Sustainability Initiative, created in January 2010, is a "strategic management group [that] will integrate sustainability initiatives on UBC's Vancouver campus" through three offices: the Research and Partnerships Office, the Teaching and Learning Office and the Campus Sustainability Office (UBC Sustainability Initiative, 2010a). The Campus Sustainability Office (CSO) is the entity relevant to this project, as it manages operational sustainability and campus engagement in operations. In early February 2011, the CSO will hold public consultations to inform both the water and waste management plans that will be developed by working groups. The format of the consultations will consist of a morning visioning session and an afternoon brainstorming session to develop specific objectives. The waste and water management plans will cohere with UBC's 2050 GHG reduction targets.

Waste Free UBC

The Waste Free Committee consists of representatives from relevant waste entities on campus including Supply Management, the Department of Health, Safety and Environment, the Campus Sustainability Office, the AMS, and a few others.

Currently, the Campus Sustainability Office is exploring different ways the committee can be officially integrated into the waste working group structure. In general, this is another important committee with which to collaborate and has continually proven to be a helpful consultation and advice hub.

UBC Supply Management

This operational department of the university regulates purchasing codes and can potentially set rules for purchasing bottled water, as well as help source UBC-brand water bottles.

UBC Athletics

UBC Athletics oversees the Bird Coop, and other sports venues, such as Doug Mitchell Thunderbird Sports Centre and War Memorial Gymnasium. These buildings have vending machines and operate concession stands that sell Dasani brand bottled water.

CUPE 116

CUPE 116 is the Point Grey branch of CUPE National, which represents workers in a variety of service positions. One of CUPE BC's campaigns is "BC Water Watch", which aims to fight the privatization of BC's waters and encourage the preservation of BC's public water services. CUPE 116 has engaged with the Federation of Canadian Municipalities' promotion of bottled-water free municipalities, by encouraging UBC administration to "[end] the purchase and sale of bottled water" and to "commit to re-building, maintain and upgrading water infrastructure on campus" (see Appendix A). CUPE 116 could therefore be a potential ally of this initiative, and provide support for any actions to ban bottled water or improve water fountain accessibility.

Metro Vancouver

In addition to managing the water supply (see the "Metro Vancouver Tap Water" section below for more information), Metro Vancouver runs a Tap Water Campaign, which encourages residents to drink tap water instead of bottled water, with a preliminary goal of reducing bottled water consumption by 20% by 2010, from 2007 levels. The campaign features a tap water pledge (whereby residents may pledge to choose tap water over bottled water whenever possible), as well as a "Tap Map" application that shows all locations where residents can find "tap water on the go". It may be possible for this initiative to make use of Metro Vancouver's resources or to receive support from this existing campaign.

City of Vancouver/ Greenest City Action Plan

In 2009, The City of Vancouver voted to eliminate the use of bottled water at all staff and council functions and to phase out the sale of bottled water at all municipal facilities and concession stands over the next few years. This decision aligns with the City's commitment to become the world's "Greenest City" by 2020. An elimination of bottled water sales is seen as a significant way to reduce waste, which complements the Zero Waste and Lighter Footprint aims of the Greenest City Action Plan. This campaign could potentially make use of the materials and resources devoted to implementing the Greenest City Action Plan, as well as the resources specifically devoted to reducing bottled water consumption and supply.

The Village, Wesbrook Place & Beyond

The Village and Wesbrook Place lie on the outskirts of the main campus body and have many businesses that sell plastic bottled water. While these business locations are physically located on UBC property, they lie outside campus jurisdiction. For now, it is important to note that even if bottled water sales were to be banned from the main campus, students could still purchase the product from nearby sources.

Common Energy UBC

Common Energy UBC is a student-run climate action group whose mission is to bring UBC beyond climate neutral. The organization consists of four subgroups that take on different aspects of student climate action, one of which is Tangible Solutions. This is the team out of which the bottled water and water fountain projects emerged and evolved into this SEEDS project. While Tangible Solutions has taken on more of a consultation role for this project, there might be interest to take on a larger role once again in the future.

Sustainability Student Groups

Two well-known environmental student groups who might be interested in partnering with this project include the Student Environment Centre (SEC) and the Environmental Science Student Association (ESSA). SEC is a resource group for the AMS. They put on various sustainability events and manage a small pot of funds that is disbursed to support sustainability initiatives. They might be interested in collaborating with this project, but have not explicitly said so. ESSA, on the other hand has explicitly voiced some interest in taking on bottled water issues. ESSA is a close-knit, student-run club for students in the Environmental Science program. It is uncertain what capacity they could offer.

In general, students are becoming increasingly interested in sustainability. According to the UBC Sustainability Initiative, there are a total of 20 student sustainability-focused groups at UBC, including 9 faculty-associated groups, 6 Student Union groups, and 5 other sustainability-focused student organizations (including Common Energy UBC) (2010b).

Metro Vancouver Tap Water

Metro Vancouver Tap Water...

...is collected from rainfall, snowmelt, creeks and streams in the mountains of the region's watersheds (Capilano, Seymour and Coquitlam), and flows to us through an enormous network of reservoirs, pumping stations and water mains.

To ensure the safety of the water, Metro Vancouver conducts daily tests and takes precautions in anticipation of events that can cause cloudiness, also known as high turbidity levels. Metro Vancouver tests and analyzes more than 25,000 drinking water samples every year.

Metro is committed to delivering and maintaining the best drinking water possible. To ensure drinking water meets provincial regulations and federal guidelines, Metro Vancouver has developed a Drinking Water Treatment Program that includes primary and secondary disinfection.

Currently in construction is the Seymour-Capilano Filtration Plant, which will treat water from both the Seymour and Capilano sources. The plant is located in the Lower Seymour Conservation Reserve (LSCR). In order to treat water from both sources at one plant, water will be conveyed between Capilano and Seymour through underground twin tunnels.

Metro Vancouver's plan for treating the Seymour and Capilano water sources is to use filtration and UV light as the alternative primary disinfectant to chlorine. Secondary disinfection with chlorine will continue to be used after filtration to safeguard our drinking water as it travels through the distribution system.

Schedule of Activities

Construction of pumping station, energy recovery facility and break head tank (Capilano)	Complete
Construction and commissioning of filtration plant (Seymour)	Complete
Turbine supply and installation	2012
Construction of twin tunnels	2013

Timeline of Seymour-Capilano Filtration Plan development as of 2010.

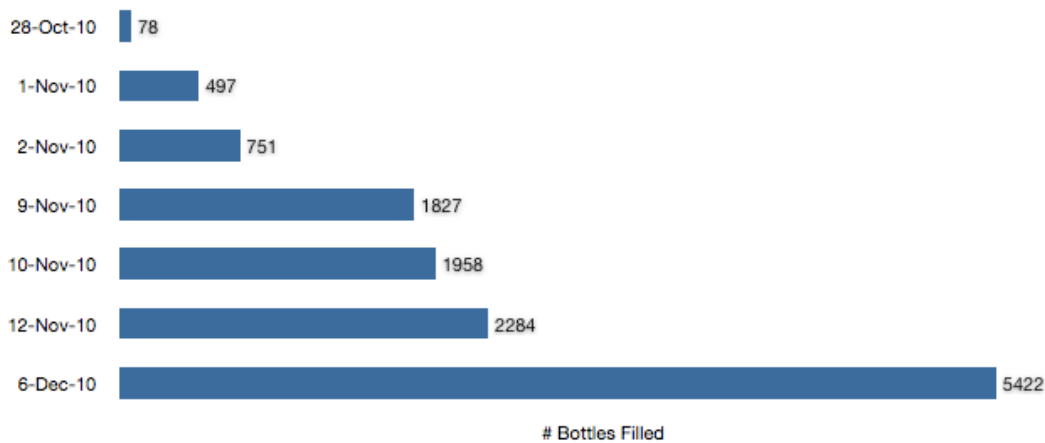
Note: all above information is directly quoted from Metro Vancouver's website.

Water Fountains on Campus

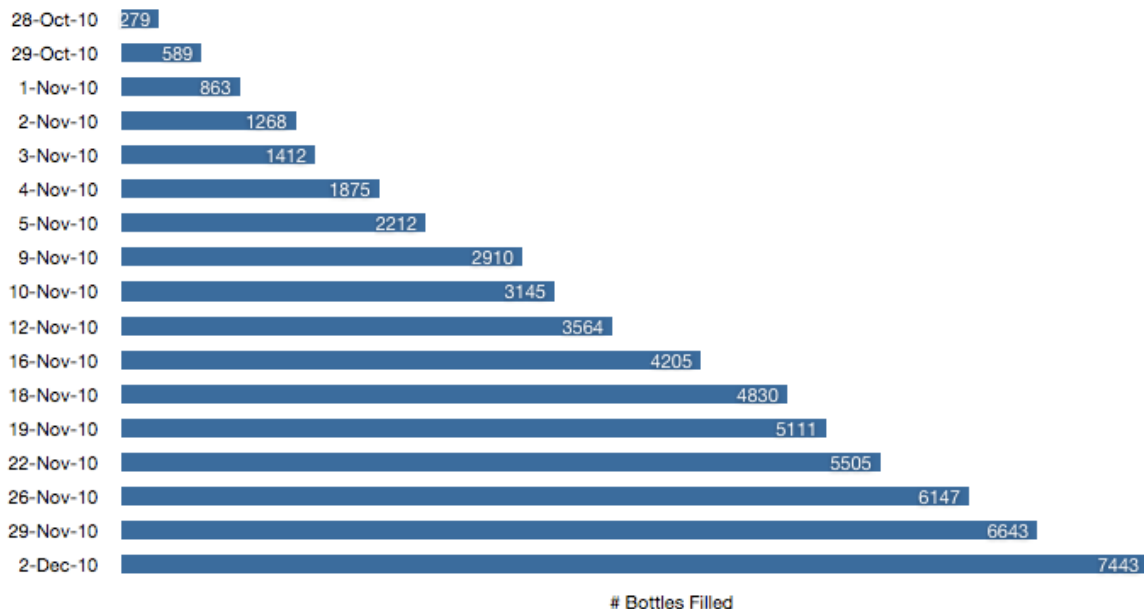
In order for tap water to be widely available on campus, functioning water fountains should be present in every building at UBC. This is not yet the case at UBC. The status update on campus water fountains found in Appendix B shows that many water fountains are functioning, but that some still need to be repaired. Also, some buildings lack a water fountain at all, including the Forest Sciences Centre and the H. R. MacMillan Building.

Recently, the AMS installed two WaterFillz machines in the Student Union Building, one on the main level and one on the basement level. The WaterFillz are equivalent to vending machines in size, and dispense cold, filtered water into bottles upon the press of a button. The machines also have counters that measure and display the number of water bottles that have been filled to date. The diagrams below show that the two WaterFillz stations filled approximately 13,000 water bottles over the span of October 28 to December 6, 2010. Please note the data represents the counter reading on that particular day / the cumulative # bottled filled starting on Oct. 28.

Bottles Filled from WaterFillz Station (Upper Level)



Bottles Filled from WaterFillz Station (Lower Level)



Reusable Water Bottles

A key factor in the ability to drink tap water is the ownership of a reusable water bottle. A wide variety of bottle types and brands exist, ranging in size, material, design, lid type and price. On campus, reusable water bottles are available for purchase at the Student Rec Centre, the UBC Bookstore, Shoppers Drugmart, Save-on-Foods, the Village, the Outpost and Starbucks.

Off campus, innumerable outlets sell reusable water bottles. Overall, a well-established market for personal reusable water bottles already exists. Thus, questions to consider for this campaign include (1) whether or not distributing a "Food Services"-branded water bottle is a wise tactic both in terms of competitive advantage principles as well as environmental sustainability, and (2) if this bottled is indeed a wise tactic, whether it should be given to all first year students during orientations at the beginning of the academic year, or merely sold at appropriate venues on campus.

Previous Work on Bottled Water Issues

Across Canada, 78 municipalities, 8 school boards, 9 universities and colleges, and 1 province (Nova Scotia) have banned bottled water (Inside the Bottle 2010). As can be observed in the following diagram, there are no campuses from British Columbia that have pledged to be bottled water free...

Collège Universitaire de Saint-Boniface Goes Bottled Water Free! Congrats!

On November 9, 2010 Collège Universitaire de Saint-Boniface announced that they will be going Bottled Water Free. A huge congrats goes out to the campus organizers and CFS Manitoba for all of their hard work on this campaign!

We only need one more campus to reach our goal of 10 bottled water free Canadian campuses before the end of 2010! Is your campus next?!?

The Nine campuses are (Click on the link for the Campus Press Release)

- [University of Winnipeg \(March 22, 2009\)](#)
- [Memorial University \(September 8, 2009\)](#)
- [Brandon University \(December 17, 2009\)](#)
- [Ryerson University \(March 11, 2010\)](#)
- [Fleming College Frost Campus \(April 8, 2010\)](#)
- [University of Ottawa \(April 22, 2010\)](#)
- [Trent University \(September 2, 2010\)](#)
- [Bishop's University \(October 6, 2010\)](#)
- [Collège Universitaire de Saint-Boniface \(November 9, 2010\)](#)

From an email from Polaris Institute to campus organizer listserve - November 10, 2010

As described earlier in this report, UBC bottled water and water fountain issues have already received some media attention, whether regarding water fountains, the Coca Cola company and/or bottled water. Below we have listed the main media coverage in chronological order:

‘The end of an era’ at UBC: Controversial 12-year deal with Coca-Cola expires on campus

September 4, 2007

<http://www2.canada.com/vancouversun/news/story.html?id=dd43ede9-ea08-463a-a4f1-f6d4830b90f4>

Canada: UBC takes steps to ban bottled water

September 2, 2008

<http://ubcdevilsadvocate.blogspot.com/2008/10/bottled-rage.html>

Bottled Rage!

October 2, 2008

<http://ubcdevilsadvocate.blogspot.com/2008/10/bottled-rage.html>

Drinking fountains available on campus: Student pressure drives \$150,000 drinking fountain project

September 24, 2009

<http://ubyssey.ca/news/drinking-fountains-available-on-campus/>

Campus Coke: what's bubbling under the surface

September 11, 2010

<http://www.ryersonian.ca/article/10841/>

Video: The Move to a Bottled Water Free Campus

October 25, 2010

<http://ubyssey.ca/news/video-the-move-to-a-water-bottle-free-campus/>

Policy 116: Coca-Cola and the Freedom of UBC's Information

May 10, 2010

<http://blogs.ubc.ca/ubcinsiders/2010/05/10/policy-116-coca-cola-and-the-freedom-of-ubcs-information/>

In regards to student activism on this issue, Common Energy UBC has tackled the bottled water and water fountain issue in many ways, evolving their efforts over a period of nearly three years. The following anecdote illustrates how Common Energy first started getting involved.

How the water fountain story began:

by Tova Jamernik

The water fountain project began with a question. Where did all the water fountains go at UBC? And why were there so many vending machines? In Buchanan, one of the busiest classroom buildings on campus, there were many vending machines with bottled water but not a single water fountain. Presumably UBC is a campus that aims for sustainability, and also reasonable costs for students, so my friends and I couldn't understand why students were buying bottled water at \$1.50 a bottle, and why there were no water fountains? As most of us know, bottled water isn't the most environmentally friendly product, with its plastic and transportation and production emissions, and it's also usually a waste of money. So where were the fountains? I decided to pose this question to Geoff Atkins, Associate Vice President of Land and Building Services. He was aware of the lack of fountains, and the many that had fallen into disrepair. He also wanted to do something about it, however noted that there would be budget and time constraints. I was very happy to have his support, at least verbally, and he was kind enough to provide a liaison with his office. But I also wanted to garner support from students and the AMS to ensure that things moved along fairly quickly. Because for every day that there was less access to fountains and more vending machines, there would be more plastic waste, emissions, and cost to students. So I began talks with the AMS sustainability coordinator, and VP administration. We had a booth going at the AMS environmental days to raise awareness of the lack of fountains. A water fountain even made an appearance as a joke candidate for VP administration just so to raise some awareness about the obvious lack of fountains on campus. The AMS also began to research replacing some of the old fountains, and putting new ones in the basement food court where there were none. It was around this time that I teamed up with the Tangible Solutions Committee of Common Energy. Everyone was very eager to take on a project that could have tangible results in making a difference on campus environmentally and for the students. We worked on determining which buildings on campus were most in need of water fountains based on capacity as well as student input. This list was then given to our liaison with the operations office, and we were promised 20 new fountains on campus. A good start at least, with hopefully more to come. To date, several of these fountains have been installed, however there is still work to do to make sure that every building contains water fountains, especially more water fountains than there are vending machines.



This is a picture of Tova with her water fountain joke candidate for VP Administration during AMS Elections 2008.

The year after Tova graduated, leaving the initiative in the hands of Tangible Solutions (2009), the team began considering how to phase out bottled water and ensure continued improvements to fountain infrastructure on campus. From July 2009 to April 2010, the team contemplated tactics such as:

- A grassroots campaign to build and mobilize student support with a petition
- Lobbying the UBC president to sign a pledge against bottled water on behalf of the university
- Implementing “Bottled Water Free Zones” across campus

In the mean time, in collaboration with Joyce Shen, AMS Sustainability Coordinator of the time, a “Think Outside the Bottle” poster was developed and put up across campus, as well as inserted into the ad slideshow of the SUB’s wide-screen televisions.

Also, from November 20 to December 3 in 2009, the team collected 109 responses for their “UBC Water Use Survey” (see Appendix C) by tabling twice in the SUB for several hours, and spreading the survey online via email and Facebook. Afterwards it was found that some questions elicited inaccurate responses. The following table shows the results from several of the questions that are more error free.

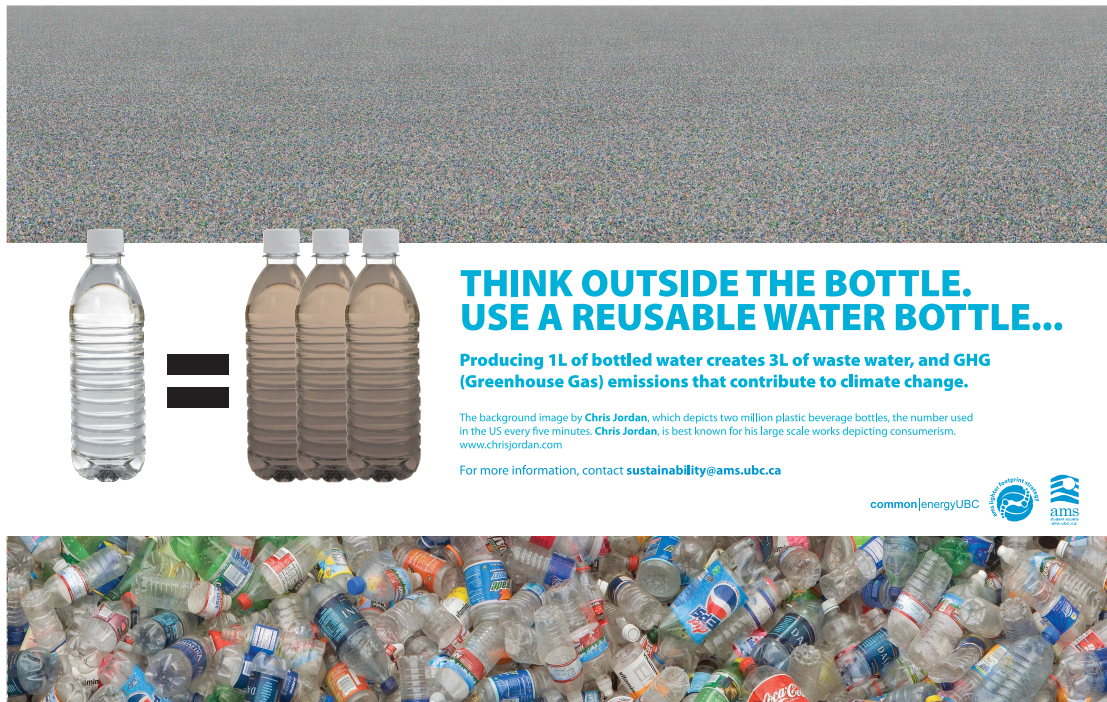
<i>STATEMENT</i>	<i>AVERAGE</i>
Water Fountains are easily accessible at UBC	3.4587 (slightly disagree)
I prefer bottled water over water fountain water	3.8611 (moderately disagree)
Tap water is healthier than bottled water	2.4815 (slightly agree)
Bottled water tastes better than UBC fountain water	3.4587 (slightly disagree)
I would drink UBC’s tap water	1.7037 (moderately agree)
UBC should have more water fountains	1.6019 (moderately agree)
I would be willing to pay slightly higher student fees for UBC to install more water fountains	2.6055 (slightly agree)
I would support a ban on selling bottled water at UBC and UBC Events	1.9541 (moderately agree)

Table 1 Respondents had to respond to each statement by selecting a number from 1 (Agree) to 5 (Disagree) that corresponds to their personal opinion. The ‘average’ column represents the average rating response on this scale.

It should be noted that there may be selection bias in the results of this survey. Many survey participants that came up to the booth did so out of personal interest. The same could be said for those who chose to fill out the survey online. However, despite this bias, there seemed to be at least some support for a bottled water free campus, looking at the above data as well as the general comments (see Appendix D).

During the following semester (January - April 2010), the team held more booths. At these booths, the team engaged students with 1) a water “taste test” activity that allowed students to realize that bottled and tap water taste nearly identical and 2) posters demonstrating the economic value of not buying bottled water with a “what you could have bought instead” schema.

Due to capacity and time constraints, as well as the “missing month” of February (during which a two week break for the Vancouver 2010 Olympics occurred, combined with a more hectic midterm exam schedule), the team did not manage to accomplish much else. Realizing that the structure and capacity of the Tangible Solutions group would not be able to successfully bring about a bottled water free campus, Angela Willock decided that a SEEDS project would be a more effective way to implement this vision. Shortly after, Rosalind Sadowski decided to co-organize the project, which leads to the project’s present status.



The “Think Outside the Bottle” poster developed in collaboration with Joyce Shen, previous AMS Sustainability Coordinator.

SWOT Analysis

SWOT stands for Strengths, Weaknesses, Opportunities and Threats. It is a tool for compiling a comprehensive list of advantages and disadvantages of an entity or program. Here we use it to summarize everything previously discussed about the stakeholders, competitors and contexts related to this project, as well as to begin to address barriers or threats in relation to our social marketing campaign.

STRENGTHS University committed to zero GHG emissions by 2050 Volunteer capacity / structure from Common Energy Existing academic interest in this issue (Commerce, Applied Engineering, Geography, Political Science) General awareness and support of sustainability Other student groups are interested in this issue (ESSA, SEC) There are many resources and much groundwork completed Relationships / network is strong and becoming more robust Creating bottled water free campuses is an international movement World class tap water and regional filtration systems Passion and creativity of student organizers	WEAKNESSES Frequent turnover within student organizations; difficult to sustain committed volunteers/organizers High learning curve; will take time to properly train volunteers While volunteer capacity exists, it may not be sufficient Struggle of balancing initiative with busy student life Frequent turnover of university students; need to establish long term strategies to orient new students every year No precedent in British Columbia of a bottled water free campus Budget shortfalls for AMS, UBC Food Services and Plant Operations Uncertainty as to where to leverage support (i.e. top-down or bottom-up approaches) Revenue loss from phasing out bottled water sales and improving drinking water infrastructure
OPPORTUNITIES Timeliness of upcoming UBC waste and water management consultations and plans Existing campaigns elsewhere can provide resources, insight, materials and other support No other B.C. campus has pledged to go bottled water free yet; UBC could gain a sustainability title External organizations (i.e. Metro Vancouver, Think Outside the Bottle) could sponsor distribution of free water bottles or other materials Media outlets at UBC and beyond could provide PR opportunity and a way to help promote initiative This SEEDS project will provide a credible platform as it is an official collaboration between the university and students Creating a bottled water free campus supports both sustainable water consumption as well as waste reduction The new Student Union Building could be advertised and developed as bottled water free	THREATS Slow implementation of better water infrastructure will hinder success of enacting behavior change Student apathy / reluctance / non-compliance / etc. Damage to water dispenser systems Natural disasters will negatively effect quality of water for certain periods of time and bottled water might be needed Counter campaigns from corporations (i.e. giving out free bottled water on Bottled Water Free Day) Competing interests for other sustainability initiatives or in general

Addressing Weaknesses and Threats

In the following table, we list all weaknesses and threats from our SWOT chart then address the issue in the adjacent column labeled “solution”. This will help guide the social marketing campaign.

Difficulty finding and maintaining volunteer capacity	- Make use of existing groups and student interest - Create incentives for student engagement in the initiative i.e. show volunteers why they are beneficial, make involvement seem “trendy” - Aggressively market the initiative during key start-of-year events, such as Imagine or Clubs Day, in order to draw new volunteers
No precedent in British Columbia of a bottled water free campus	- However, there are precedents from elsewhere in Canada - Market this lack of precedence as strength rather than weakness - Thoroughly investigate best practices from other university’s initiatives to re-assure UBC stakeholders
Frequent turnover of student body	- Aggressively market the campaign during key start-of-year events, such as Imagine or Clubs Day, in order to prime new students into the practice of not buying bottled water
Revenue loss from phasing out bottled water sales and improving drinking water infrastructure	- Demonstrate that sales of other bottled drinks are likely to increase - Reinforce precedence of funding for other sustainability initiatives at UBC: i.e. revenue loss from installing in-vessel composter - Use marketing that demonstrates why this revenue loss is “justified” - Generate student support for less bottled water and more fountains, so that university has no choice but to acknowledge this shift in consumer preferences
Uncertainty as to where to leverage support (i.e. top-down or bottom-up approaches)	- Possible to make use of both: i.e. build student movement but also work with administrative bodies - Interview key stakeholders to determine whether they would respond better to administrative orders or consumer pressure
Student apathy / reluctance / non-compliance / etc.	- Will always be a challenge. The marketing campaign must therefore be as engaging as possible - see the Social Marketing Plan for more information.
Counter campaigns from corporations (i.e. giving out free bottled water on Bottled Water Free Day)	- Not guaranteed to be a threat. - Can be leveraged as a way to mock the desperation of these companies
Damage to water dispenser systems	- May entail additional costs to repair infrastructure due to vandalism or malfunctioning etc. however this is also an issue with vending machines - Favor sturdy hydration stations with low cost of replacing parts

Why This Initiative Will Succeed

Ultimately, the move to a “bottled-water free” UBC will be successful because of the university’s commitment to zero emissions by 2050. In order to achieve this ambitious goal, bottled water sales on campus will eventually have to be ceased. The question is therefore *when* this move will occur, not if.

Given the factors listed as strengths and opportunities in our SWOT for this campaign, the *when* should be able to happen within the next five years. Bottled water and water fountain issues have received considerable media coverage and momentum is building for institutions to go bottled-water free across Canada. As such, mandating a bottled-water free institution in the near future would be a highly beneficial and symbolic move for the university, as well as sensible in terms of emissions reduction. It would be good PR for the university to collaborate with students and take advantage of a visible, well-supported opportunity. In the scheme of what needs happen to achieve 100% emissions reductions, making UBC bottled water free and water fountain accessible is low-hanging fruit.

Regardless, a key component of transitioning to bottled-water free campus successfully - and sooner rather than later - will be an effective social marketing campaign.

MARKET RESEARCH:

What the Consumers Think and Want

Research Questions

The survey was developed with the aim of answering the following research questions:

- What are students' attitudes / beliefs about drinking water consumption at UBC?
- How do the majority of students obtain their drinking water?
- What are the primary barriers to the adoption of more sustainable drinking water methods? What are the main leverage points (Meadows, 1999) through which a transition to a sustainable drinking water system may be affected at UBC?
- What is the most feasible, sustainable, consumer-preferred water bottle?

Methods

Survey Development

The primary method of data collection for this report was through a survey, delivered both in-person and online. Question development was informed by stakeholders and meeting with the COMM 468 student group responsible for developing a marketing plan for AMS Sustainability, a project that ran simultaneously to this one.

The stakeholder meetings were informative in several regards:

- Assisted development of project focus
- Provided feedback on the proposed survey questions. Stakeholders recommended adding a question about a bottled-water ban after the initial surveying "trial"
- Assisted with development of survey delivery tactics. Both Food Services' managers recommended which locations would be most frequented and representative of the consumer base
- Meeting with COMM 468 ensured project aims were complementary and that excessive overlap of survey locations or questions were avoided

The survey was divided into 2 components: Water consumption behaviors and preferences, and water bottle usage and preferences (see Appendix E).

After both surveys had been delivered on at least one occasion, the survey questions were re-evaluated for wording. No major changes were made except for the addition of the ban question. Both of the surveys were delivered to approximately 40-50 people prior to "refinement". Where consistent, these participants were included in the survey results.

In-person Survey Delivery

Surveying was conducted between October 12th and November 5th, over 14 separate days. Time scheduled for surveying was divided with attempted evenness between locations.

Five locations were selected at which to deliver the in-person survey:

1. Ike's Cafe in Irving K. Barber Library: Selected because of high bottled water sales (approximately 1425 units/month in the September to December period of 2009), because bottled water represents a significant portion of the bottled drinks sales mix (on average 25.5%, in the September to December period of 2009) and because of considerable student traffic through the Irving library.
2. Pacific Spirit Place (PSP) in the SUB: Selected because this location has the highest bottled water sales (approximately 2169 units/month in the September to December period of 2009) and because bottled water represents nearly a third of all bottled drink sales. Furthermore, this location has a very large volume of student traffic, including those who do not make purchases from any of the outlets but choose to eat or study in this area.
3. Bernoulli's Bagels in the SUB: Selected because this location is adjacent to the WaterFillz machine on the main level, which provided an interesting opportunity to judge consumers' awareness of this facility. Also selected to provide a sampling of consumers at an AMS business. Lastly, consumers are often waiting in this area for their order, which provides an easily accessed source of participants.
4. Place Vanier Residence: Selected because first-year students living in residence often have quite different behavior/purchasing patterns than the rest of campus. Because the cafeteria is usually these students' primary, if not exclusive, source of food and beverages, the impact of any efforts to shift water consumption preferences could be directly monitored through sales changes at these outlets.
5. Tim Horton's restaurant in the Forest Sciences Centre: This location was added after the initial round of surveying, after which the stakeholders suggested that it might be prudent to add a location on "east" campus, to gauge the opinions of those students who primarily frequent this side of campus.

ALL locations were selected because they housed food service operations, with the aim of targeting food consumers on campus. It was also determined that individuals in the general vicinity of these locations could be interviewed, in order to access those students who do not make purchases from these food service outlets. Specifically, this was done on the main floor of Irving K. Barber Learning Centre, adjacent to Ike's Café.

The Buchanan Cafe was originally selected as a location because it was the only UBC Food Services outlet that does not sell bottled water. However, after a trial run, it was determined that the location was not ideal with respect to both time efficiency and adequate data representation because of the lower amount of consumers and slow traffic flow.

At Ike's, PSP, Bernoulli's and Tim Hortons: Students were approached while waiting in lines, or while sitting in the vicinity and asked if they would be able to "answer a few questions about drinking water at UBC", or a similar statement. No reference was made to bottled water, or of the "sustainability affiliations" of both researchers. Participants were asked to respond to one of the two surveys.

At Place Vanier: a booth was set up on the upper level just outside the exit from the cafeteria. Free candy was offered to survey respondents to encourage participation. A booth was deemed suitable for this area as space was available and candy could be strategically displayed. Participants were asked to respond to one of the two surveys or both, if time allowed and/or if the participant wanted an additional candy.

Online Survey

The online survey was developed to generate more responses without investing more time conducting in-person surveys, as well as to allow for respondents to put more thought and time into their responses, especially for the open-ended questions.

The online version was launched on October 16 and collected data from over 150 respondents until November 11. Questions used the exact wording of the questions listed in Appendix E. There was also an open-ended “comments or feedback” section at its conclusion.

The survey was distributed through various email listserves, whose membership related to sustainability focuses or initiatives. It was also posted on Facebook.

Comparison of In-person versus Online surveying:

Survey Method:	Advantages	Disadvantages
In-person	- Good response rates, most students when approached agree to take survey - Usually generates random sample of population, if no particular type of student is targeted - More likely to access students who purchase bottled drinks from food service outlets	- Some wording of questions modified in order to facilitate speed of survey administration. Ex: in-person, respondents asked “why don’t you use a personal water bottle”, whereas online, the question was “which of the following are reasons for not using a personal bottle” - Those approached usually had limited window of time to be surveyed and therefore were not inclined to share many, if any, additional thoughts or comments - Locations selected for surveying may not actually be representative of consumer trends and/or have representative sample of UBC students - Certain opinions may be muted or altered in order to avoid conflict with survey interviewers
Online	- Easy to generate numerous responses - May reach students who do not frequent food service outlets - Those completing the survey online likely have more time to provide more detailed answers to open-ended questions - Respondents more likely to provide frank/honest opinions due to anonymity - Young adults are more likely to respond to online surveys and this is the target population	- Not necessarily a random sample of the population ---> Because survey distributed through sustainability-oriented listserves, it is possible that respondents hold stronger views on the importance of sustainability, which may temper their responses ---> Those respondents who accessed the survey via the postings on Facebook might be aware of the “sustainability leanings” of both researchers and modify their responses to align with those views ---> Those who choose to respond to the survey might do so because they have a pre-existing interest in the topic, which could lead to “unusual” views on certain questions

Please note that some of these ideas were guided by literature written by McMorris et al (2009), as well as literature from SuperSurvey (2005) (see references).

A Note About the Personal Water Bottle Questions

One of the original research questions concerned what personal reusable water bottle consumers preferred. Questions related to this inquiry were included in all the surveys, and data exists. However, in consideration of time constraints and the uncertainty as to whether investing in a campus-wide UBC water bottle is a good tactic.

Other limitations of methodology

Besides the limitations of in-person and online survey methods, there are also other factors that limited the research:

- Not all respondents answered all questions. As such, each set of statistics in the results section is calculated on a question-to-question basis, and all percentages only refer to the number of students who responded to that question.
- The question about a bottled water ban was added after approximately one week of surveying had been completed, and subsequently has a smaller sample size. The responses to this question should therefore be treated with caution, as these views may not be as representative of general student views as some of the other questions.
- The time period during which the survey was conducted may have lead to less relevant views of drinking water. By mid-to-late October, sales of bottled water tend to decline with the changes in the weather. Consequently, students may not be as aware of their drinking water habits at this time of year.
- For the in-person surveying, surveys were not delivered equally amongst locations, nor was there any attempt to correlate the number of surveys delivered in a particular location with the number of visitors to that location in a given day. Consequently, some locations may be over-represented, while others may be under-represented, and this may have led to a non-representative sampling of views
- Due to time constraints, only 5 locations were selected for interviewing, and were only visited during a two-week period. In order to achieve a more representative sampling of student opinions, it would have been prudent to visit additional food service outlets, or to return more frequently to the 5 selected locations.

In Summary:

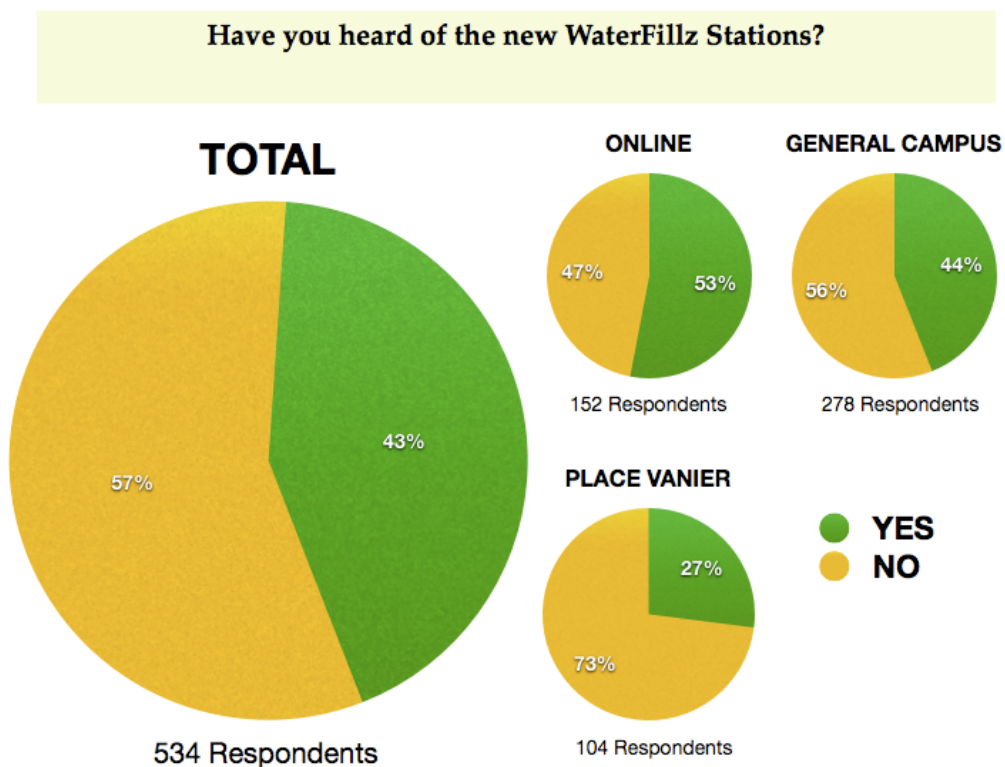
The degree to which each total data set is representative of the UBC population is questionable. To help distinguish different demographics and develop appropriate social marketing strategies, in the results section, the data will sometimes be differentiated between online respondents, in-person respondents (“General Campus”) and first-year respondents (“Place Vanier”).

Findings & Discussion

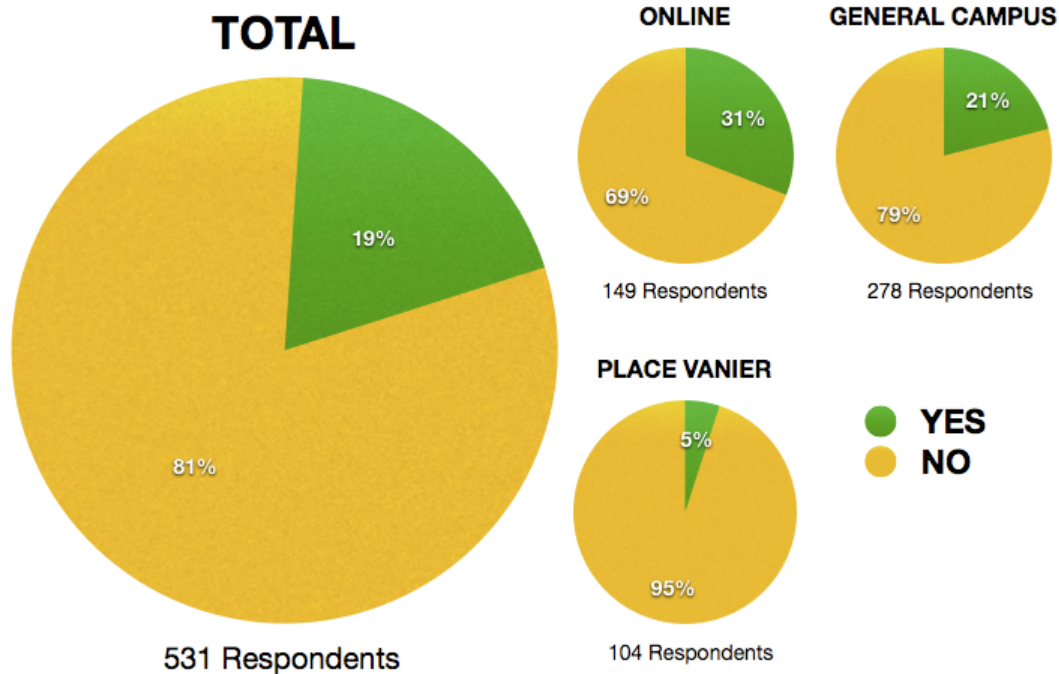
The ensuing series of pages are structured to address a certain topic section by section. Each section includes a brief introduction explaining the reason the particular package of questions was included in the surveys, diagrams that demonstrate the survey results, a summary of those results, and, finally, a discussion of the results.

WaterFillz Stations

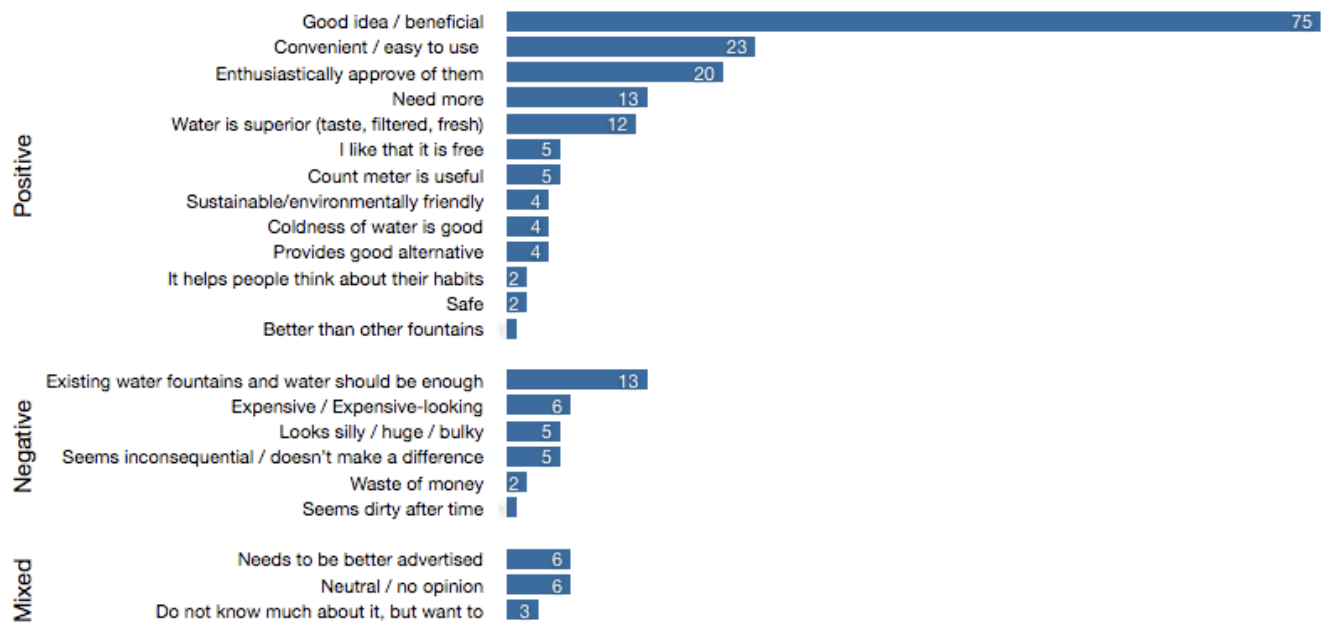
Respondents were asked whether they had heard of and used a WaterFillz machine, and if so, what they thought about them. We included these questions to help determine the impact and public reception of the machines because the machines were only installed at the beginning of the 2010/2011 academic year and represent a considerable investment for the AMS.



Have you used a WaterFillz Station?



What do you think of the WaterFillz Stations?



times mentioned among 165 respondents (52 from online survey)

Summary:

- Awareness of the WaterFillz stations in the SUB is fairly widespread, considering the units had only been installed for approximately 1.5 months by the time our surveys were conducted;
- Around half of those who had heard of the WaterFillz stations also used them at least once;
- Most of those who have used the WaterFillz approve of them because they are easy to use and dispense fresh, clean water. Some also enjoy the counter and being able to see how many bottles the machines has filled;
- Most of those who did not approve of the WaterFillz stations thought them unnecessary (because existing water infrastructure is adequate), excessive, too expensive, and deceiving, in that the WaterFillz stations can give the impression that tap water is otherwise unsafe to drink.

Discussion:

Overall, WaterFillz stations have been well received by students. More research needs to be done to determine whether the WaterFillz stations would be the best hydration stations for other locations on campus, taking into account economics concerns, environmental sustainability and ease of use. Some of the main concerns that can be addressed in the context of this project are the following perceptions associated with the WaterFillz stations:

1. Tap water is only safe to drink from WaterFillz stations.
2. Waterfillz stations are un-necessary, excessive and/or energy intensive.

This data also provides valuable evidence that some people are enthusiastic and fully willing to drink tap water if a reliable and safe source is available.

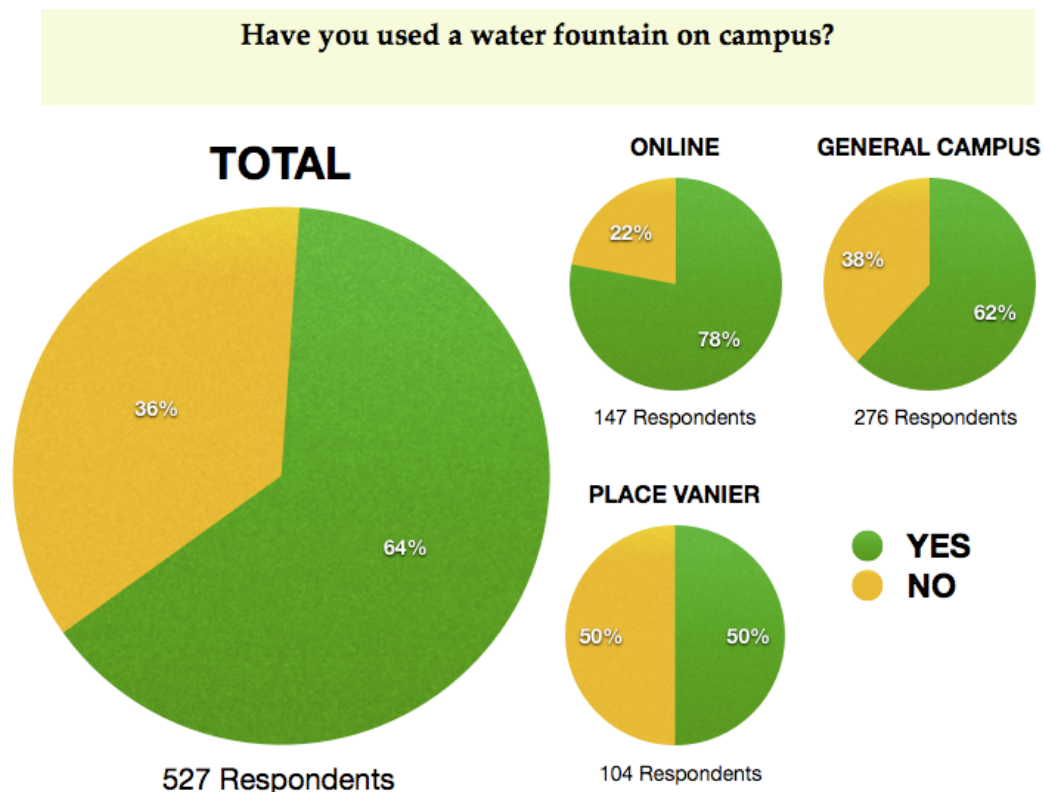
Finally, it should be noted that while some students might not have “heard” of the WaterFillz, they may have seen the machines and noted their function, without being aware of what the unit’s name. In-person, a brief description was given sometimes, and on the online survey, sub-text to the first WaterFillz question also provided a brief description (“not the silver or white water fountains, but the big blue vending machine-like water dispensers”). However, there may be more students aware of the WaterFillz stations than what our survey data indicates.

Water Fountains on Campus

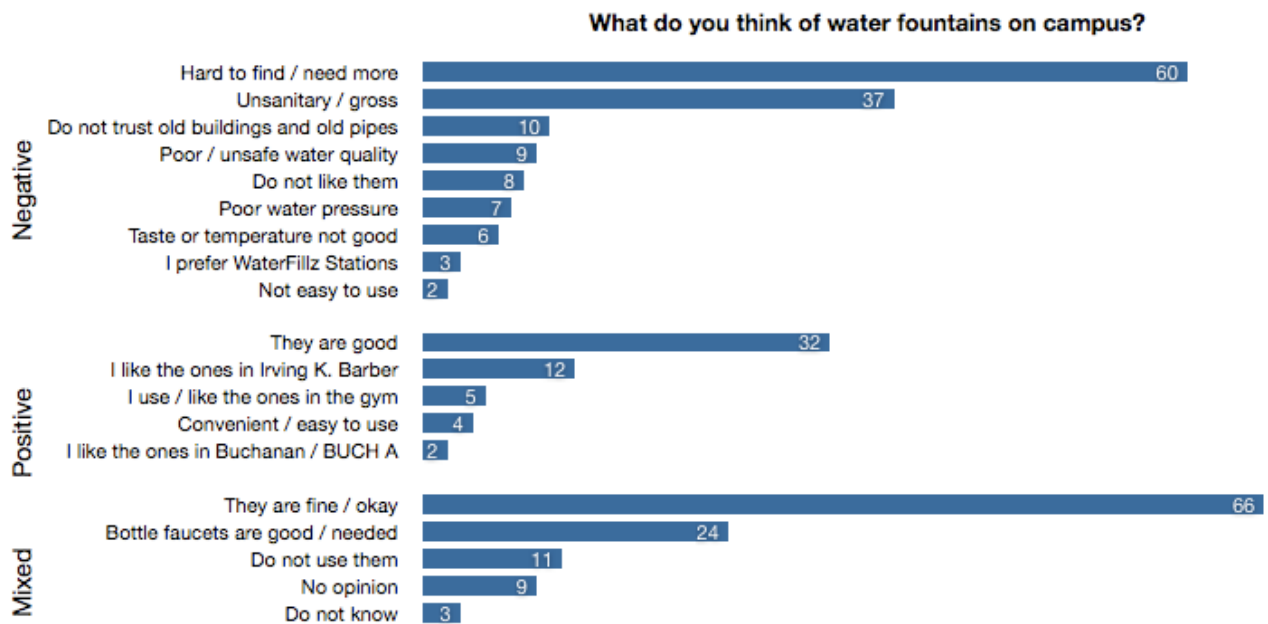
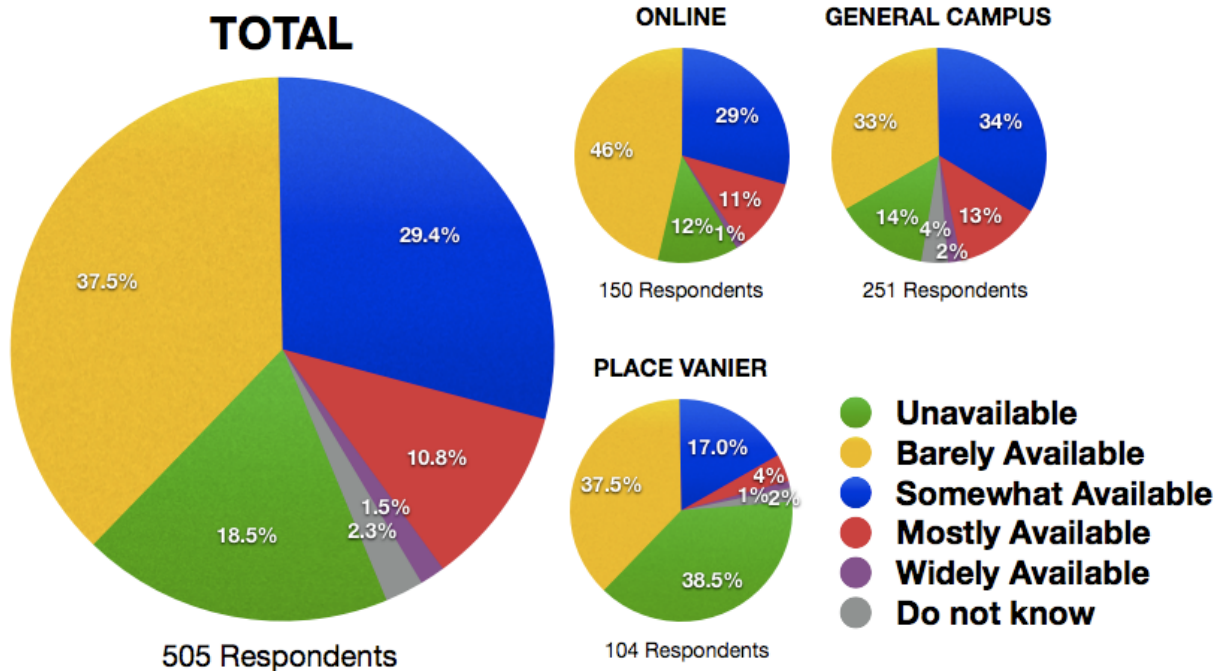
These questions focus on respondents' perceptions of fountain availability, rates of fountain use and general perceptions of fountains, if they have been used.

Why we included these questions:

- 1) The availability of fountain infrastructure is closely tied with fostering sustainable drinking water consumption. If fountains are seen as widely available, students may be more inclined to use them, and a stronger case can be made for limiting or ceasing sales of bottled water. Conversely, if fountains are not seen as widely available, this might mean students would be less likely to use them and that a transition away from bottled water might be more difficult.
- 2) We focused on students' *perceptions* of water fountains (in terms of availability, and general thoughts) because we want to market this infrastructure to this audience, and therefore need to know what barriers they believe exist to obtaining water from hydration stations.
- 3) We wanted to know how many students use fountains in order to determine what level of marketing would be required to transition students towards using this infrastructure.



How available are water fountains on campus?



times mentioned among 282 respondents (63 from online survey)

Summary:

- The majority of survey respondents think that water fountains on campus are either moderately available, barely available, or unavailable. Some mentioned a lack of fountains in specific buildings they commonly frequent, and a few mentioned that some of the water fountains do not work at all.
- Most have used a water fountain on campus at least once
- Those who have used water fountains on campus like the ones in the Irving K. Barber Learning Centre, the “gym” (the Bird Coop in the Student Rec Centre) and the new ones in the Buchanan buildings. Numerous respondents also expressed preference for the water fountains with the specialized faucet for easy bottle refill, and that every fountain should have one.
- Some water fountains were criticized for being unsanitary and/or having water pressure issues (most mentioned low pressure, but a few said that some water fountains had excessive pressure).
- Overall, while many people seem to think campus water fountains are “alright” or “good”, many others are unhappy with water fountains in some way.

Discussion:

The opinion that water fountains are unavailable on campus is especially prevalent amongst first year students living in Vanier. This is likely attributable to their lack of experience on campus and the fact that water is easily accessible in residence and students regularly return to their dorm between classes, lessening the chance they would need to refill their water bottles elsewhere. This may or may not have caused a slight skew in the data.

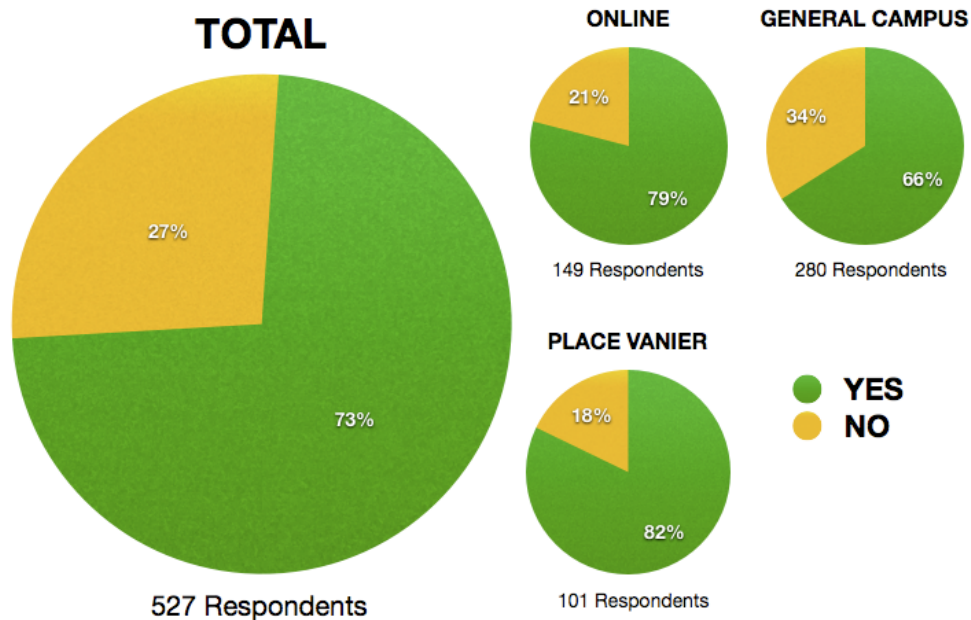
Also, those who do not use or only infrequently use water fountains would not actively seek them out on a daily basis, thus lessening the chance they would even notice water fountains in their surroundings. This may have increased the number of people who reported water fountains as moderately, barely or un- available. While these factors may have also skewed the results to some degree, it is arguably still clear that most people do not think water fountains are widely available on campus. Those who do not actively seek out water fountains might still have said water fountains were fairly available on campus if they were actually omnipresent and placed in visible, intuitive places.

Not only do water fountains need to be more available, but they need to be clean, clean looking and functional. If water fountains are to be used by more people, they need to have appropriate water pressure, be maintained to a hygienic level and have an extra faucet for filling water bottles. Also, fountains in older buildings might need an appropriate filter (and labeling indicating the presence of this filter) to address concerns about contamination of water by older pipes. It is beyond the scope of this project to conduct a life-cycle analysis of different ‘hydration station’ technology to determine which systems would be appropriate for campus in terms of environmental, economic and social sustainability. However, it would be advisable for a future team to conduct this analysis, and to determine the best water fountains for each location.

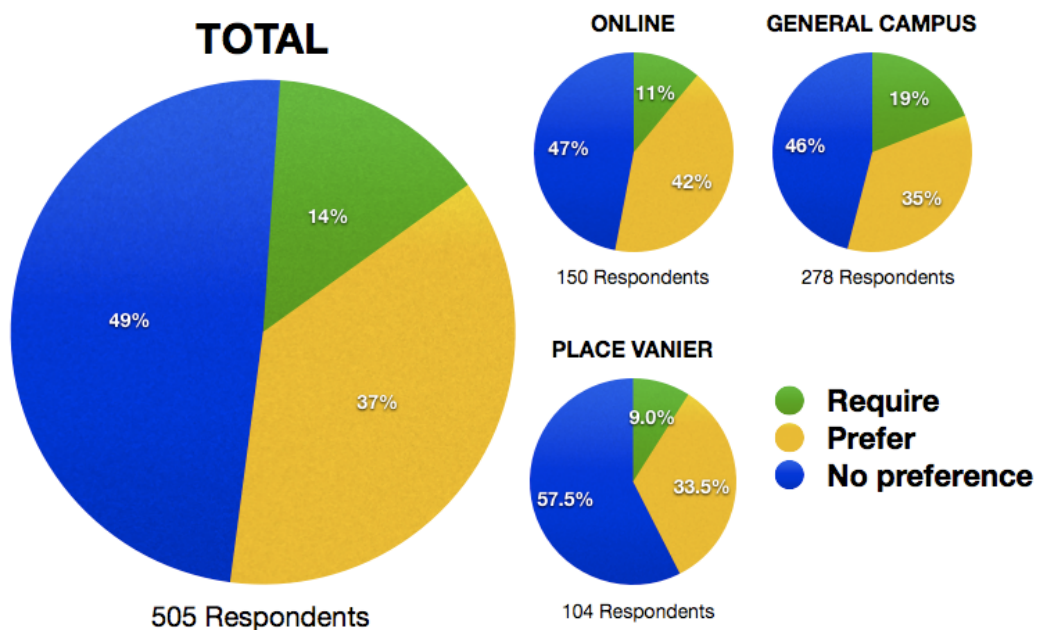
Water Quality on Campus

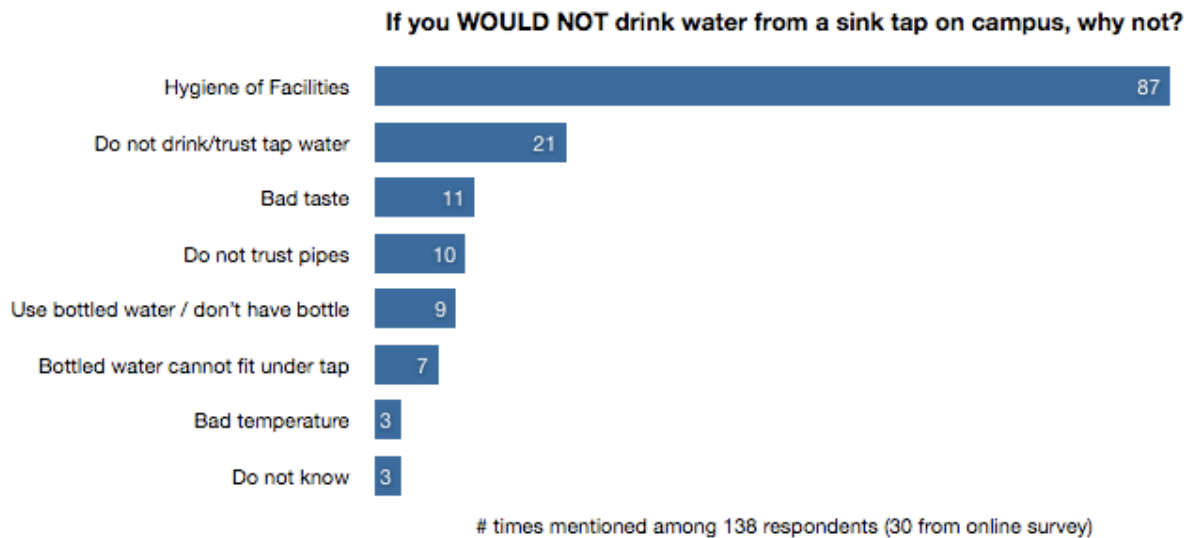
In this section, respondents were asked about their filtration preferences for water, as well as whether they would drink water from a sink tap on campus (and if no, why not). These questions were included to determine barriers to using water infrastructure in buildings, as well as to gauge how informed respondents were on the quality of local tap water.

Would you drink water from a sink tap on campus?



If you were to drink tap water on campus, do you require it to be filtered, prefer it to be filtered, or do you have no preference?





Summary:

- Most people would drink water from a sink tap on campus.
- For those who would not drink from a sink tap, the main points of resistance include concerns about the hygiene of facilities and the safety or taste of the tap water.
- When drinking water on campus, 49% of 505 respondents do not care whether their water is filtered, 37% prefer their water to be filtered, and 14% require filtration. In other words, half of respondents trust local tap water, whereas the other half either do not, or are confused about whether to or not.

Discussion:

One problem with the question “would you drink water from a sink tap on campus?” is that some people responded negatively because they assumed obtaining water from a public bathroom, a place typically seen as highly unhygienic. The question was intended to ask solely about tap water, but mentioned the context of a sink in order to avoid confusion with previous answers to questions about water fountains. In spite of this, the responses indicate that most people are willing to drink tap water, but there are also many who are sensitive to hygiene.

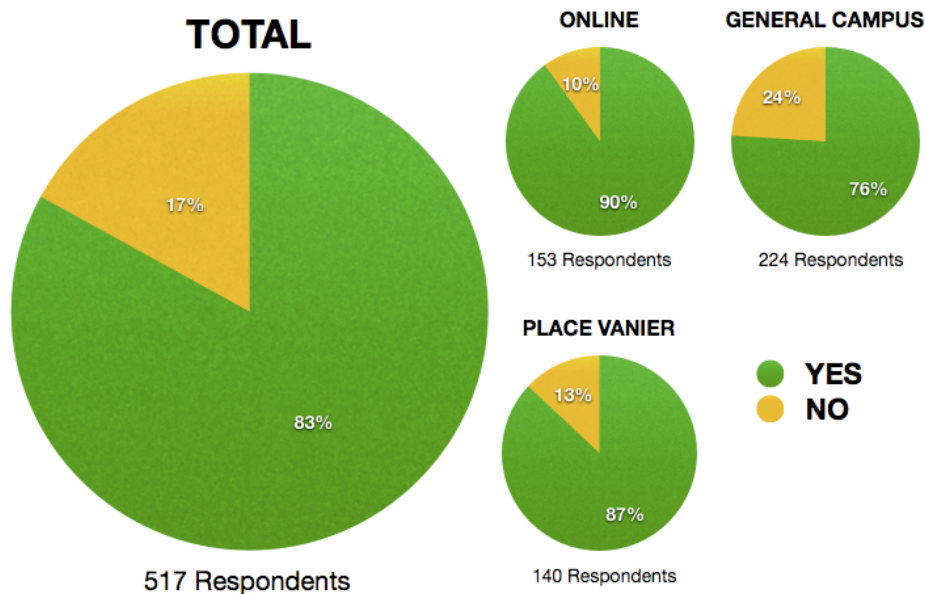
In regards to filtration, it is clear that education efforts are crucial to convey the safety and high quality of Metro Vancouver’s tap water, as well as why certain water sources seem unhygienic or unsafe and if they should be avoided or not.

Personal Water Bottle Use

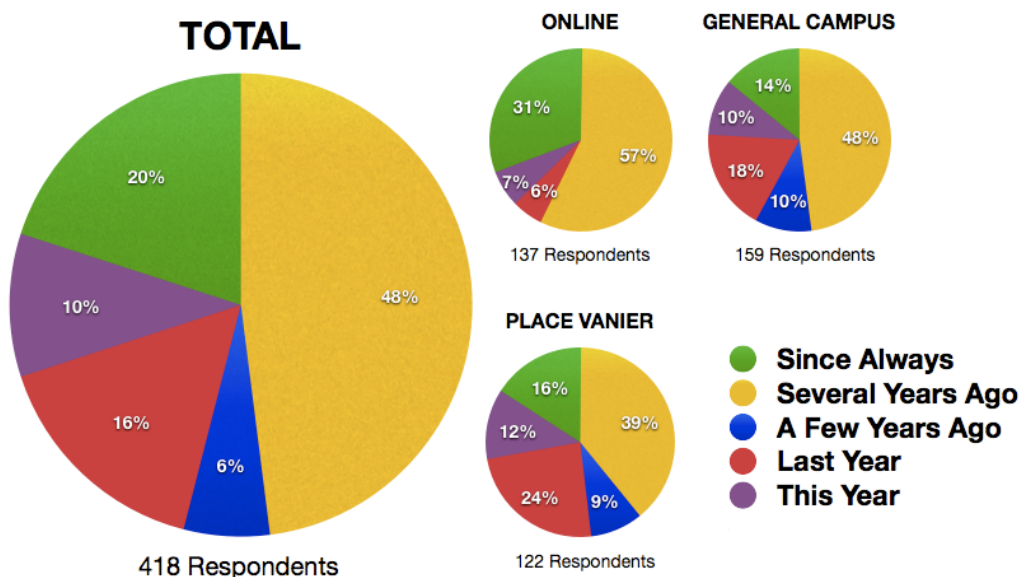
This section examines how many people own reusable water bottles, what motivated those individuals to start using them, and what prevents those who do not use their own water bottles from doing so. These questions were included to:

- 1) Examine what arguments might be employed to convince individuals to start using and exclusively use their own bottled; and
- 2) Determine what barriers exist to bottle possession, which would need to be addressed in the marketing plan.

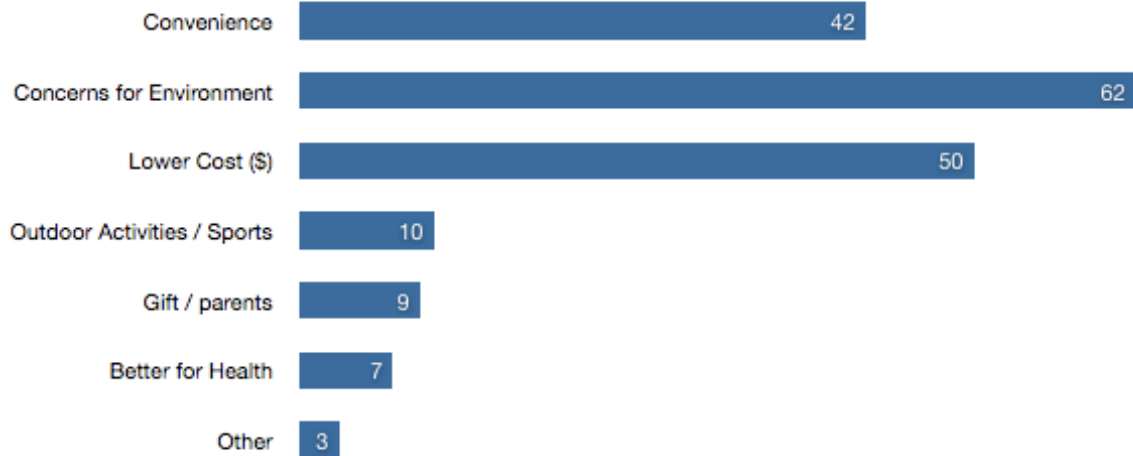
Do you own and use a personal water bottle?



When did you start using your own water bottle?



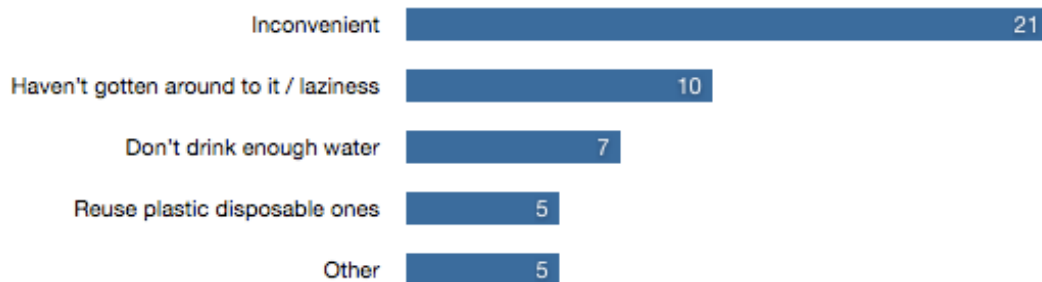
What made you start using your own water bottle?



times mentioned among 319 respondents (126 from online survey)

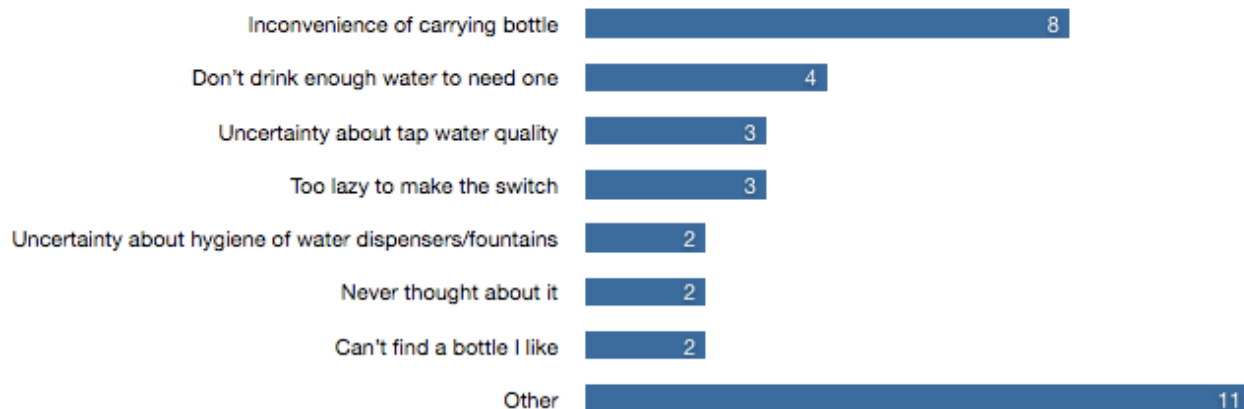
Examples of 'other' responses for why consumers own a personal water bottle: "because re-usable bottles are prettier", "concerned about the privatization or commodification of water" "do not want to support Coca-Cola" "tap water tastes better" "when I moved to Canada, everyone used their own water bottle"

Why do you not own a personal water bottle? (In-Person Responses)



times mentioned among 43 respondents

Why do you not own a personal water bottle (Online Responses)



times mentioned among 13 respondents

Examples of 'other' responses for why consumers do NOT own a personal water bottle: "don't like taste of tap water" "allergic to fluoride in tap water" "use a mug instead" / "re-usable cups were always available when water was needed"

Summary:

- Most people use a personal water bottle (83%) and have done so for more than three years (68%). There are also many who have started in the last couple years.
- Among the online respondents, there is a mix of intrinsic (convenience and financial cost) and extrinsic (environmental degradation) values that motivated most to start using a water bottle.
- The most prominent reasons for not using a personal water bottle are the inconvenience of having to carry a bottle, inadequate motivation and uncertainty about the cleanliness of the facilities and tap water.
- A small minority claim to reuse the plastic disposable water bottles.

Discussion:

Interestingly, convenience seems to be the highest factor in not using a water bottle as well as one of the most prominent reasons why those already using a water bottle started doing so. Evidently, the small details of the day differ from person to person, and thus, 'convenience' may take many forms, whether it is inconvenience of having to constantly buy commercial bottled water, the inconvenience of having to carry a heavy water bottle, the inconvenience of having to wash a personal bottle, and so on. Addressing convenience in messaging should therefore be treated with caution, as this concept is not universal. Those who perceive using a personal bottle as inconvenient might have to be shown that this barrier is not as significant as they believe (see section on "external barriers" in the Social Marketing Plan).

Addressing issues other than convenience might be more persuasive in messaging, such as the financial cost of drinking bottled water versus tap water. Switching to tap water is evidently also more environmentally sustainable, but this factor should be treated as a supplementary benefit in messaging. De-Shalit's analysis of why environmental campaigns fail argues that environmental movements often focus exclusively on "bio-centric" arguments, when it is usually more effective to focus on human-based arguments, such as health, personal safety or economic considerations (2001).

It is also interesting to note that of the "other" reasons for owning a bottle, concerns about the commercialization of bottled water and unwillingness to support Coca-Cola were only expressed in the online survey. This may have been for a number of reasons, including the fact that respondents would have more time to reflect on the question and/or might have been more "radically-minded". Regardless, these would not appear to be major messages on which to focus the campaign.

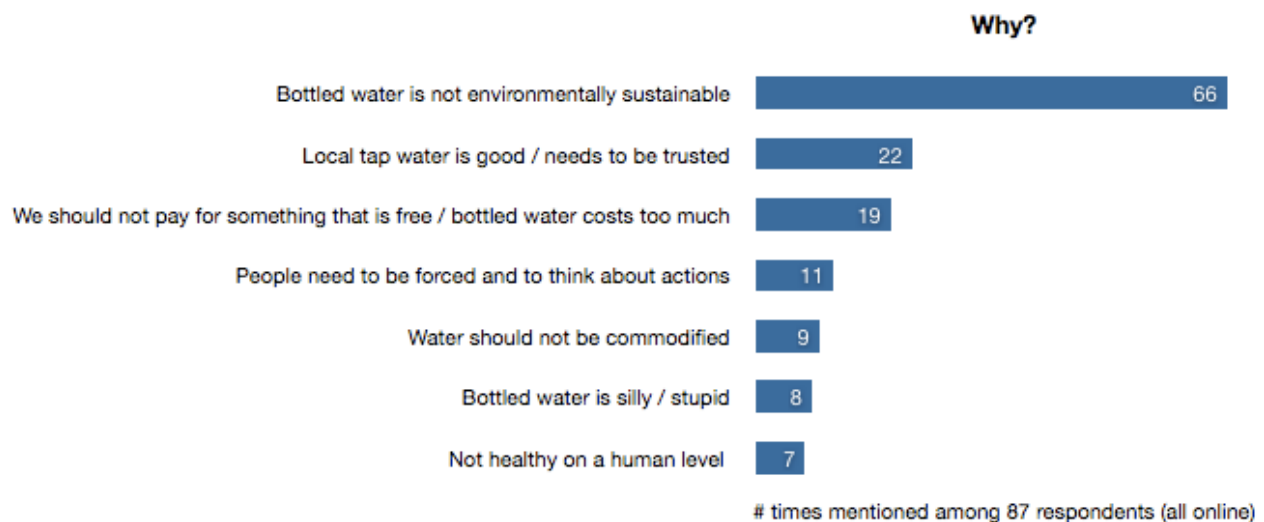
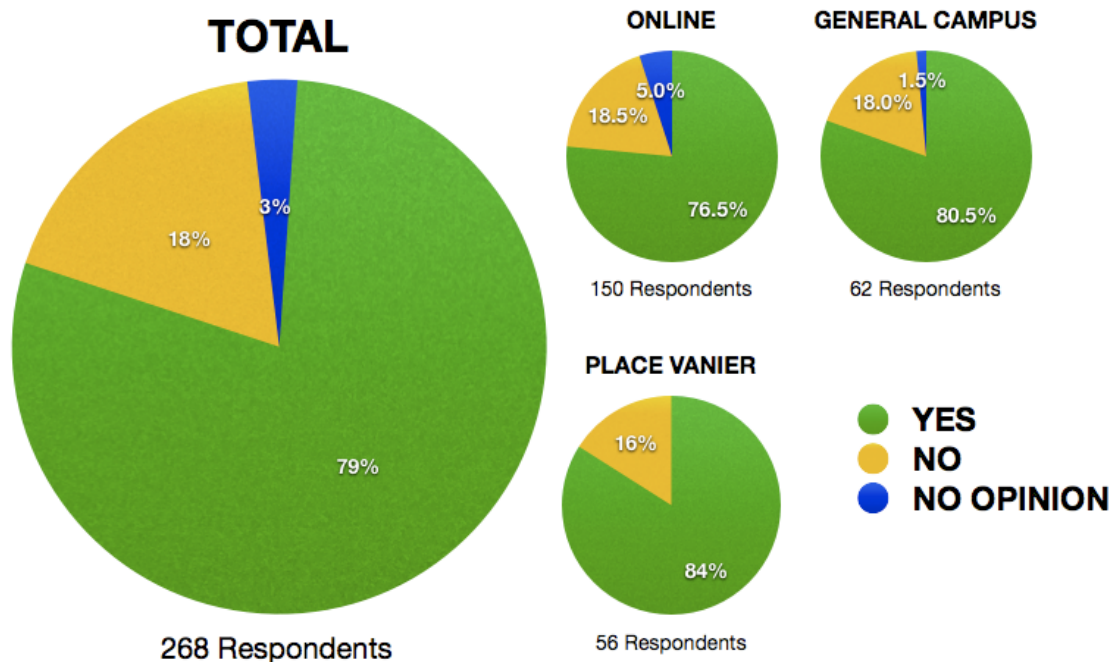
If additional time had allowed, it might have been valuable to categorize the arguments for owning a bottle based on length of owning the bottle. Those who have owned a bottle for "several years" or "since always" might have different reasons for using a personal bottle than those who only recently adopted the habit, and the reasons offered by those who only recently adopted this behavior might be more relevant to convincing others.

In addition, the wording of the question "which of the following are reasons for not using a personal water bottle" should have been modified so the same question was asked both in person and online, as the different wording produced different kinds of responses.

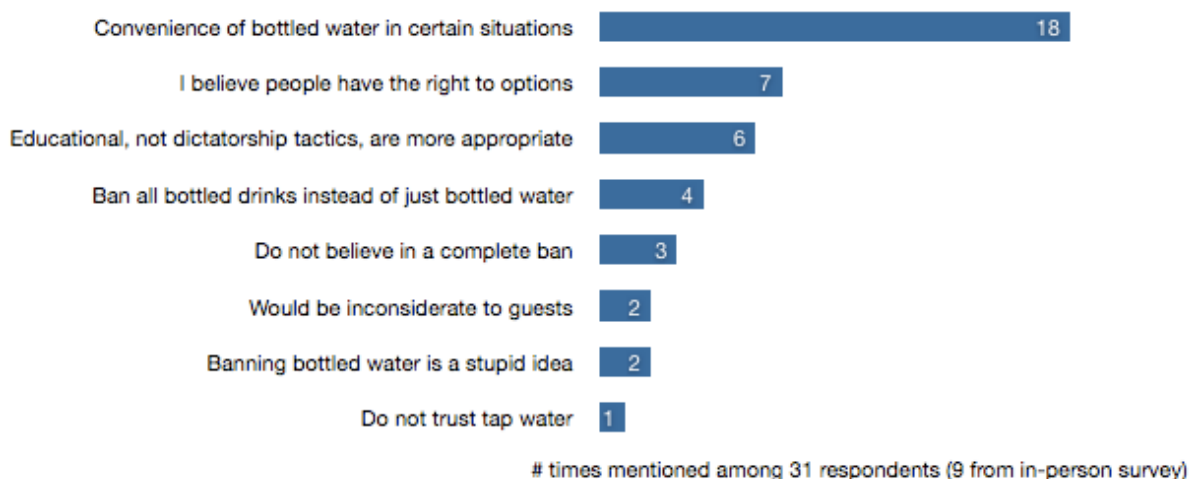
Bottled Water Ban

In this section, respondents were asked whether they would support a ban on the sales of bottled water given adequate alternatives, and why or why not. This question was not necessarily included to push forth the agenda of an actual ban. It was more so intended to gauge the overall support for efforts to foster a transition away from bottled water and to improve drinking water infrastructure on campus.

If there were adequate, alternative ways to obtain clean, safe water on campus, would you support a ban on the sales of bottled water?



Why not?



Summary:

- The majority of respondents would support eliminating or banning bottled water on campus given that adequate alternatives exist
- The main reasons for supporting such a measure include the large environmental footprint of bottled water, the absurdity of water as a merchandised product, and various related ideas.
- Those not in support of a ban had a variety of compelling reasons for their opinion:
 - Belief in the human right to options
 - Desire to maintain convenient access to a product they personally perceive as a need
 - Belief that a ban is an inappropriate strategy for behavior change
 - Belief that all plastic, disposable bottled drinks should be banned, not just bottled water
 - Belief that a complete ban would be inconsiderate, given the potentially extenuating circumstances of guests or those who forget their bottle

Discussion:

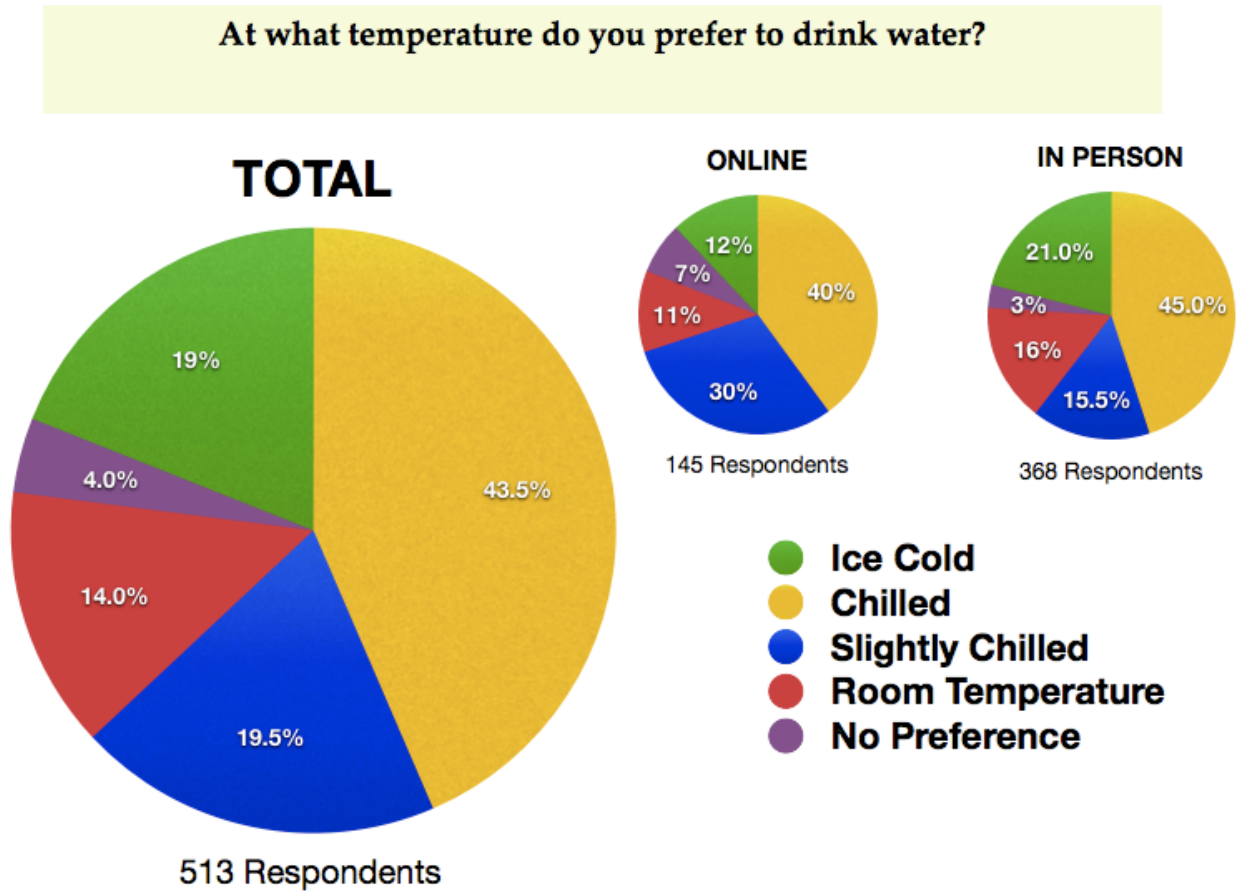
The results show that the concept of a ban is acceptable to a majority of students, which suggests considerable student support could be mustered for such an initiative.

However, this result holds certain caveats:

- Only 118 students were asked this question in person, because the question was added in conjunction with the launch of the on-line survey, which came after the initial round of surveys was completed
- While none of the online survey respondents can be proven to have a bias, the survey was distributed through email listserves geared towards those involved with sustainability on campus or interested in such issues. The survey was also advertised to personal acquaintances on Facebook, who are aware of our sustainability background and potential interest in a ban, and would thus be more likely to want to “support” our cause.
- It should also be noted that while a ban would immediately achieve the desired aim of eliminating an unnecessary and wasteful product from UBC shelves, other methods could be effective, such as a consumption tax on all purchases of bottled water.

Temperature of Drinking Water

Here, survey participants were asked about their temperature preference for drinking water. This question was included to inform decision-making for how water is provided in existing and future water fountains.



Summary:

Most people prefer to drink water at a cold temperature.

Discussion:

In order to encourage use of tap water, water fountains should provide chilled water. Furthermore, if food service outlets provide tap water as an alternative to bottled water, it should be ensured that this water remains chilled, so that this service is equally appealing to consumers as the refrigerated bottles of water on sale.

Addressing Criticisms and Concerns

Sometimes participants provided opinions that did not directly respond to the question or were the only comment of its kind among all responses. Also, at the end of the online survey, respondents were given a chance to share any other thoughts or comments. In the table below, notable criticisms and concerns are listed and addressed. Please note that each comment will be directly quoted from what the respective respondent wrote to allow for accurate representation.

Comment	Our Response
As much as I don't like plastic bottles, I think it's more sustainable to get rid of coke and other pops before water. LESS CORN SYRUP = HEALTHIER PEOPLE. This whole demonizing of plastic water bottles still doesn't get to the heart of the sustainability problem of providing safe and healthy drinking options to people. I believe it's better to provide multiple water options for people instead of unhealthy drinks.	We agree that, ideally, with respect to both human and environmental sustainability, distribution of all plastic bottled drinks should be ceased. However, that is a separate issue, with deeper systematic implications that we have not yet begun to tackle. In the words of <i>Inside the Bottle</i>, "there is simply no evidence to support the claim that individuals will return to drinking unhealthy soda beverages if bottled water is not available. We are not talking about removing water as a beverage option for people. Any action that includes the removal of bottled water should encourage the consumption of tap water. The truth is that the choice is not only between bottled water and soda beverages, the real choice is between private goods and public water" (Alter 2009). Furthermore, encouraging people to carry around their own water bottle is a small step towards larger behavior change. It will reduce the chance of an individual buying bottled water elsewhere, and increase the chances of that individual's willingness to carry around other reusable food and drink containers.
I don't think your effort to make water fountains more available or have the Waterfillz station is really going to decrease the number of people drinking bottled water. I think the people who are drinking bottled water fall under the following camps: 1. People too lazy/forgetful to carry their bottle around. 2. People who aren't aware of its stupidity. They think that it's healthier or tastes better or are the type of people who like prestigious brands (e.g. Fiji). Given how misinformed these people are, its unlikely they will know if you install a filtration system for the water fountains. I think education will be the best solution. That and stigmatizing drinking bottled water. And you wouldn't just have to explain it once, you need to explain it each year, when there's a fresh batch of students. Also, efforts to filter the water fountain would make people assume that means that regular tap water is unsafe to drink. Even having the question in the survey will make people who would've never considered the filtration issue think that there is some controversy or concerns about it's safety. I think a marketing campaign needs to be waged for the benefits of tap water as fiercely as beverage companies have been waging theirs to give it a bad name.	This project was never intended to ONLY increase the availability of water dispensers on campus without long-term education strategies as well. As we have seen from our survey data, there are quite a number of people who are misinformed, unsure or ignorant about local water quality, and these opinions arrive fresh every year with the influx of new students. Also, gauging the prevalence of this type of individual was the purpose of our filtration question, not to rally for filters. It is not our opinion that all water fountains should have a filtration system. The water accessible on campus is perfectly adequate. The main issue here is with fountains that are irregularly used. For these fountains, water sits in the pipe for long periods of time, slowly absorbing metals leeching from the pipes, which are quite old in some buildings. It is unknown whether the tap water from old pipes/buildings is safe to drink as long as it is regularly used / flushed, but in the instances where it may not be safe, perhaps filtration will be necessary. More research will need to be done in this area.

Overall Summary of Market Research

The results of our market research provide numerous points for consideration. Some of these results confirmed our existing views, such as:

- There is a low availability of water fountains on campus and there are several barriers to using this infrastructure;
- A ban might not be the appropriate initial strategy to combat bottled water consumption
- Convenience and cost are two major reasons for using a personal water bottle;
- That first-year students are less aware of drinking water infrastructure, in terms of both the WaterFillz and water fountains.

There were also results that surprised us, or enlightened us:

- A majority of students had heard of the WaterFillz Stations, despite the infancy of these units;
- A majority of students are willing to drink water from a sink tap on campus;
- The overall support for bottled water ban.

Overall, these results prove highly valuable as a foundation for our social marketing campaign. Guiding insights to consider include:

- Developing separate marketing strategies for first-years, as their opinions are clearly unique from those of other students;
- Addressing concerns about water quality and the cleanliness of fountain infrastructure, as these are major barriers to consuming drinking water on campus;
- The role of convenience as both a barrier to and a reason for using a personal water bottle
- Students currently perceive water fountains as relatively unavailable. To combat this barrier, resources should be provided to increase awareness and use of existing fountains. However, this initiative should also aim to increase the cleanliness and availability of fountains;
- The WaterFillz machines are a valuable selling point for the marketing campaign, as consumers find them useful and beneficial. However, the machines might not be best for all locations on campus, and special consideration needs to go into ensuring there is no confusion around whether or not tap water is safe to drink that is not from the WaterFillz.

SOCIAL MARKETING PLAN: Shifting to Sustainable Drinking Water Practices

Campaign Goals

Our ultimate goal is to see UBC adopt complete sustainable drinking water practices by September 2014. This would include becoming a bottled water free campus, ensuring wide availability of tap water infrastructure and establishing long-term behavior-change programs.

This section contains a detailed action plan for the social marketing campaign that seeks to accomplish these goals, beginning in January 2011.

Why Social Marketing?

Social marketing is marketing for the greater social good. It is marketing devoted to the sole purpose of promoting a behavior beneficial to society at large, and differs from conventional marketing in that it is not for profit (Weinrich). Our campaign fits this definition exactly, as it is not a business enterprise, and exists for the unique purpose of helping to create a more sustainable society in one particular way.

This project also draws upon the work of environmental psychologist Douglas McKenzie-Mohr in community-based social marketing, which is defined by his website and book, *Fostering Sustainable Behavior: Community-Based Social Marketing*, as the following:

Community-based social marketing is an attractive alternative to information intensive campaigns. In contrast to conventional approaches, community-based social marketing has been shown to be very effective at bringing about behavior change. Its effectiveness is due to its pragmatic approach. This approach involves: identifying barriers to a sustainable behavior, designing a strategy that utilizes behavior change tools, piloting the strategy with a small segment of a community, and finally, evaluating the impact of the program once it has been implemented across a community (1999).

Social marketing campaigns, as well as general marketing campaigns, are usually developed through the framework of the “four P’s”. The four P’s are: product, price, place and promotion. Each P is described below in the context of our campaign. We will not directly refer to the four P’s in ensuing sections. The purpose of defining these concepts is to provide context and rationalize the campaign strategies.

Product: The product of a marketing plan is that what is being ‘sold’. It does not have to be a material item. In this case, we are selling an idea / behavior that includes multiple tangible and intangible parts (tap water, reusable water bottles, water fountains, sustainability, health, etc.).

Price: Price refers to what target individuals must do to in order to “buy” the product. Typically, the consumer must be convinced that the benefits outweigh the costs / price in order for the marketing campaign to succeed. In the context of drinking water, the main price of drinking tap water is loss of convenience in certain respects. There are many benefits to drinking tap water, and this campaign aims to effectively convey these.

Place: Place refers to how the product reaches the target audience. In this campaign, this primarily involves the use of various information channels: bulletin boards, newspapers, social media, email, events etc.), but also infrastructural channels (water fountain locations) and distribution channels (if a campus-branded water bottle is developed).

Promotion: Promotion is the “face” of a marketing campaign and refers to the methods by which the product is communicated. For social marketing campaigns, the concept of promotion strategy overlaps with that of place strategy, but also involves messaging, branding, the type of information provided and the way that information is delivered. For example, one “place” or channel through which we will be campaigning is online, through social media outlets. Promotion describes exactly what kind of social media will be used and how the audience will be engaged (i.e. a pledge on Facebook, or a blog roll that posts campaign updates).

Target Audience

Water consumers on campus include students, staff, faculty and visitors. In November 2008, the student population of UBC consisted of approximately 36,600 undergraduate students and 8,350 graduate students, making a total of 45,000 part-time and full-time students. The student population consists of undergraduate and graduate, domestic and international, on-campus and off-campus residents, pursuing degrees in 33 different categories. The university employs over 12,000 staff and faculty (University of British Columbia, 2010).

The primary target of this campaign is the student population of UBC because (1) students make up the bulk of the UBC campus population, (2) the behavior of students largely determines how the university makes decisions, and (3) this is a student-run initiative, and students tend to exert more social influence over their peers than the administration can.

We segment students into the following categories: those that live on campus in first year residences, and the upper year/commuter students, who live in a variety of locations. This distinction allows for the development of appropriate strategies to address the different ways water is accessed on campus. First-years are distinguished from other students in part due to the markedly different results from the Place Vanier surveys.

For first year students living in residence, most tend to obtain their food and drink from the Totem Park or Place Vanier cafeterias, depending on the residence in which they live. For students that live off campus and for those that live in upper-year residences on campus, water is obtained from the tap at home or on campus. This plan will suggest strategies for marketing sustainable drinking water consumption to both of these segments.

Action Plan and Timeline

Action Plan and Timeline Overview

- | | |
|-----------------------|---|
| January 2011 | ➔ Recruit other volunteers and determine long term capacity |
| | ➔ Develop online portal |
| | ➔ Request meeting re: Bottled Water Free Imagine Day and orientations 2011 |
| | ➔ Prepare for participation in Waste and Water Consultations and determine follow up strategy |
| February 2011 | ➔ Participate in Waste and Water Consultations |
| | ➔ Determine branding and messaging (ongoing) |
| | ➔ Establish collaboration with Imagine Day and orientations 2011 |
| March 2011 | ➔ Develop promotional, educational and financial strategies (ongoing) |
| | ➔ Potentially run a pilot event |
| September 2011 | ➔ Full Campaign Launch |
| September 2014 | ➔ UBC officially becomes bottled water free! |

Detailed Action Plan and Timeline

January 2011

1. Recruit other volunteers and Determine long-term capacity

As Rosalind will be leaving the country for 8 months, and Angela will only have time equivalent to a 3-credit course during which to work on this initiative, it would be beneficial to try recruit capacity and new talent immediately.

- Determine whether any positions can be created as an AMS intern position
- Approach/outreach through ESSA, POLI 375, Common Energy's listserves, Facebook, AMS Sustainability Coordinator
- Re-integrate the initiative into Tangible Solutions' portfolio

2. Develop online portal

While most of the campaign's online presence only needs to be developed for September 2011, there needs to be some sort of online reference and platform leading up to the Waste and Water Consultations.

- Create and develop a Wordpress blog containing a blog roll, this report and other relevant resources
- Facebook page to be created after branding and September campaigns are developed
- Facebook page and/or Wordpress blog will be the central hub for all information relating to the campaign, once it is launched, including details about contests, events, new developments etc.

3. Request meeting re: Bottled Water Free Imagine Day and Orientations 2011

Much of this campaign's success will be determined in the first few weeks of the next academic year, especially in regards to new students, whether first year or upper year. During the first couple of weeks, new students are faced with an intense amount of new information and a whole new landscape to orient to. Long-term patterns of behavior are formed during this time, which is why it is crucial for this campaign to feature prominently amidst the chaos of Imagine Day and the first two weeks.

- Develop a brief proposal with initial ideas, capacity, budget and logistics plan
- Request meeting with Imagine Day coordinators to discuss "Bottled Water Free" Imagine Day
- Determine how to pitch the bottled-water free concept to AMS Firstweek coordinators and request meetings where necessary
- Begin brainstorm of other key start of term events or partnerships to form; these might include working with UBC REC, AMS Clubs Day, the UBC Thunderbirds, the Bird Coop or the Imaginus Poster Sale.

4. Prepare for participation in Waste and Water Consultations and Determine follow-up strategy

This is the crucial time to give input into how drinking water infrastructure should be managed and promoted at UBC. All public feedback and documents forwarded to the waste and water plan working groups will influence decisions made about the plan's timeline and priorities.

- Become well-acquainted with the purpose, structure, scope and overall impact of the consultations
- Develop and execute strategy to insert appropriate influence into the consultations and ensuing plan development

February 2011

5. Participate in Waste and Water Consultations

Before attending the consultations, it must be carefully decided how strongly and in what scope bottled water and water fountain issues should be mentioned, as drinking water issues are not the only issues of concern in the wider scheme of sustainability.

- Attend full consultations on February 8 and 10

6. Determine Branding (ongoing)

The messaging strategies of this campaign will all flow from the brand created for the campaign. The brand will consist of an exciting slogan and design or logo.

- Develop criteria for the ideal slogan / campaign design
- Compile all branding ideas with accompanying campaign strategies and ideas from campaigns at other schools
- Select top 3 ideas using criteria
- Ensure ability to use / copy these ideas
- Decide on branding by consulting with stakeholders, communications experts and student focus groups
- If necessary, get a graphic designer to develop or tweak branding into usable formats

7. Establish collaboration with Imagine Day and Orientations 2011

- Hold meeting with Imagine Day Coordinators; discuss the implementation of a bottled-water free event
- Re-evaluate and ensure long-term capacity

March 2011

8. Develop promotional, educational and financial strategies (ongoing)

This can begin earlier, depending on team capacity and the progress of other developments, and is a process ongoing up to and continuing past September 2011.

- Use this report to help guide campaign strategy decision making
- Determine strategy for UBC branded bottles
- Develop a detailed timeline and action plan for ensuing efforts
- Re-evaluate and ensure long term capacity

9. Potentially run pilot event

- Could organize event as “dry-run” of some of the campaign ideas and messages
- Could be linked with events such as national “Bottled-Water Free Day” (March 10) and international “World Water Day” (March 22)
- Event could be geared towards those already involved with sustainability initiatives (who would likely be pre-disposed to attend such an event) and be used as an opportunity for feedback on the proposed strategies and branding
- May not be a useful step, in that it might be premature to try and recruit a broad campus audience to any event and gathering feedback from those already involved in the movement may not provide a necessary level of criticism (assuming such a pilot event would only attract “the choir”).

September 2011

10. Full Campaign Launch

- Would incorporate ongoing evaluation of the various strategies. Those deemed as “effective” (based on appropriate criteria) would be repeated later in the year or in following years.
- Please see next section for campaign ideas and guidelines.

September 2014

11. UBC officially becomes bottled water free!

As explained earlier, UBC must become a bottled water free campus if it truly means to reduce emissions by 100% by 2050; it is just a matter of when. While it is preferred that this happens as soon as possible, we feel that setting an ultimate deadline of September 2014 is most reasonable and feasible. This will allow enough time to improve water fountain infrastructure, for bottled water distributors to clean up their act and for long-term educational programs to be put in place. It also the approximate and planned date for the opening of the New Student Union Building, which will be one of the most sustainable, interactive buildings on campus, and which could and should open as a bottled water free zone.

Campaign Ideas and Guidelines

This chart contains all ideas that we have come across or thought of so far:

Large, attention-grabbing booth on Imagine Day	Campus “art” (ex: hang empty plastic bottles from tree branches, water bottle statue made up of plastic bottled water, big sack of plastic bottles)
Boothing on Clubs Day and other AMS events	Campaign to get AMS Clubs to go bottled water free
Create an interactive, fun game for boothing (ex: Spin the Bottle)	Campaign to switch all staff and faculty office drinking water to point-of-use dispensers
Postering at strategic locations (i.e. on the back of bathroom stall doors, SUB TV’s, residence common areas)	Write interesting / fun facts on classroom whiteboards
Stickers (“I <3 Tap Water”)	Ubyyssey feature
Signage at water fountains explaining safeness and functions	Develop a funny educational video
Bottled Water Free Pledge / Petition / Counter	“How much do you love your water bottle?!” Photo contest
Bottled Water Free Zones	Create “Did you know...?” fact sheets
Bottled Water Free Day (March 11)	Develop a water fountain Google map
World Water Day (March 22)	Develop a drinking water pocket guide
Bottled Water Free Events (i.e. Student Leadership Conference, residence events)	Hold event during Sustainable Campuses NOW! Conference or Responsible Consumption Week

Many of these campaign ideas embody Mckenzie-Mohr’s “tools” for overcoming barriers to sustainable behavior, at a community level. These tools include: commitment, incentives, prompts and norms. Mckenzie-Mohr also recommends that a social marketing strategy employ a mix of tools, to increase the likelihood of success (1999). The role of convenience as a barrier to a successful social marketing is also addressed.

What these tools are and how the campaign makes use of them:

1. **Commitment:** One key to ensuring an individual adopts and maintains a sustainable behavior is to ascertain agreement to a smaller, initial request, and then pursue agreement to a larger, subsequent request. This strategy is effective because strong social pressure exists to behave “consistently”, i.e. in line with previous words or actions.

Notes about commitment:

- This agreement to an initial request may take the form of signing a pledge or agreeing to place a sticker in a visible area to show support for a certain cause.
- Written commitments are usually more effective than verbal commitments.
- It is particularly important to *publicize the commitment*.
- Focus on group commitments in “well established groups in which individuals care how they are viewed by other members of the group” (Mckenzie-Mohr, 1999)
- Use a “block leader” (or similar individual) to ask community members for commitment, as this person is already seen as influential and/or authoritative to a degree.
- Commitment should never be forced: agreement should only be obtained if the individual expresses interest, otherwise the strategy will fail.

How this applies to the bottled water campaign:

- One focus of the campaign might be a pledge to drink tap water
 - In order to make the pledge a success, rather than a meaningless statement, those who have signed should be publicized: students should be able to see which of their friends have signed, with perhaps a profile of certain students who have signed, explaining why they support this initiative
- Targets:
 - First-Years: Residence Advisors in the first-year residences would be useful “block leader”- type figures. They could promote the pledge, or other initiatives, as one of the programs they are required to run each semester or through other programs such as the “Residence Energy Challenge” that was coordinated by the Campus Sustainability Office in the Fall 2010 semester.
 - Upper-Years/Commuters: The pledge could be publicized at key events these students might attend, such as Clubs Day, the Imagus Poster Sale, Thunderbird games, the Student Leadership Conference etc. and at strategic locations with high student traffic, such as the SUB or Irving K. Barber Library.

2. Incentives: Incentives can take many forms, such as financial, the attainment of social approval etc. Incentives can encourage individuals to more effectively adopt a behavior they have already attempted, i.e. to always bring their own water bottle, rather than sometimes purchase bottled water *or*

can induce individuals to adopt a new behavior, such as beginning to use a personal water bottle.

The keys to successful incentives:

- “Closely Pair the Incentive and the Behavior”: in other words, ensure feedback is immediate and occurs in tandem with the behavior
- “Use Incentives to Reward Positive Behavior”: people are more likely to engage in a sustainable behavior if they are rewarded for adopting it
- “Make the Incentive Visible”: people must be aware of an incentive for it to be effective. This point is similar to that about publicizing commitment and relates to the discussion of prompts (see below).

How this applies to the bottled water campaign:

- Individuals should be shown how the act of not buying bottled water is beneficial to themselves, to others, and to the environment
- Ways that this strategy rewards/ could reward sustainable drinking water consumption:
 - When individuals ask to purchase bottled water, food service staff could highlight the availability of free water at nearby locations (or at that location)
 - Signage could be placed adjacent to the cash register showing alternative uses for the money that might have been spent on bottled water
 - Signage could be placed above or adjacent to hydration stations, thanking people for using these facilities and explaining how their behavior is beneficial
 - The contest for “how much do you love your water bottle?”
 - Students would take pictures of themselves to show how much they love their bottle (i.e. dressing it up, sleeping with it, etc.) and then these photos would be displayed through the online portal (i.e. through Facebook). Other students would then vote on which photo they like best, and the winner(s) would be awarded a prize.
 - This contest could create an additional incentive to use a water bottle, if the prize were sufficiently appealing.
- Targets:
 - First-Years:
 - Any incentives publicized through signage would be posted in the cafeterias. The existing Dasani bottled-water displays could also feature “warning signs” next to them, while the water-dispensing machine could feature a sign focusing on the positives of choosing this water.
 - Advisors could also create additional incentives for participation, such as offering the floor with the most pledges to go “bottled-water free” a pizza party, for example. Advisors could also distribute campaign materials within buildings, in bathrooms for example, to act as prompts for students (see following section) and promote the photo contest.
 - Upper-Year/Commuter students:
 - Signage, including advertisements for the photo contest and other events, as well as general messaging about the sustainable water consumption, would be placed at food service outlets and fountains across campus. Using a breadth of locations would hopefully reach a broad spectrum of students.

3. Prompts: “A prompt is a visual or auditory aid which reminds us to carry out an activity that we might otherwise forget” (Mckenzie-Mohr, 1999). Prompts are valuable because often those predisposed to engage in a sustainable behavior simply forget to do so.

Notes about prompts:

- Slogans are useful, but such “nonexplicit” prompts usually have little impact on behavior if not used in conjunction with other prompts or behavior change tools
- “Prompts should be delivered as close in space and time as possible to the target behavior” (Mckenzie-Mohr, 1999).
- Prompts should encourage positive behaviors rather than prompt an avoidance of an environmentally-detrimental behavior

How this applies to the bottled water campaign:

- Prompts are similar to incentives. Many of the strategies to employ incentives also serve as prompts. Examples:
 - Signs at cash registers of food service outlets reminding people of how they benefit from not purchasing bottled water
 - Stickers or posters near or on vending machines, with the same message as above.
 - Stickers with a slogan such as “I love tap water” or “I’m tapping”, or a similar message, that students could place on their fridge or personal bottle or backpack, to provide a constant reminder of the campaign message. Such a strategy is also effective because it publicizes a student’s commitment.
 - A wallet guide to “drinking water at UBC” could also be developed, which students would then (hopefully) see every time they went to buy a bottled drink.
- Targets: see the section in “Incentives”

4. Social norms and the behavior and attitudes of others have significant impacts on an individual’s behavior. Therefore, if it becomes a social norm to not purchase bottled water, people will feel pressure to modify their behavior if they do still purchase the product. This is both a promotional strategy, as well as a price strategy, as individuals often perceive social inclusion as a valuable element of their personal lives.

Norms influence behavior in 2 ways:

- Compliance methods encourage individuals to modify their behavior in order to “receive a reward, to provoke a favorable reaction from others, or to avoid being punished” (Mckenzie-Mohr, 1999). The issue with compliance is that if the incentive or punishment is removed, individuals may no longer engage in the activity.
- Conformity methods relate to how individuals will adopt a behavior by observing the behavior of others, and has been shown to have longer-lasting impacts.

Therefore, social marketing programs that communicate what are considered accepted behaviors in the community are usually most effective.

How this applies to the bottled water campaign:

- It should be communicated that a strong majority of students support drinking tap water or bringing their own bottle, and high participation rates in existing campaigns should be emphasized.
 - This could be achieved through the pledge, and by publicizing how many people have signed the pledge, as well as profiling individuals who have signed, so that others may recognize their friends and acquaintances and feel pressure to act similarly
 - Posters or other material could emphasize how many students already use their own bottle (i.e. 83%) to demonstrate how this is the standard behavior amongst UBC students.
 - Provide free bottles to all first years. This sends the message that all students at UBC use their own bottle- that drinking tap water is “UBC culture”.

- The counter on the WaterFillz machines is an effective way of communicating norms, as it shows students the large number of individuals that have already adopted this behavior, and allows them to feel part of the community making sustainable drinking water choices.
- Targets
 - First-Years: the distribution of free bottles will specifically reach this target group. In addition, advisors can distribute and display campaign materials, such as posters or stickers, to constantly remind students of the message and help them understand that this campaign is a wide-reaching and well-accepted initiative.
 - Upper-Year/Commuter students: These students are more likely to interact with the WaterFillz stations, which could be featured in the water fountain map that will be developed. Updates could also be provided on the AMS website (or through other channels of communication) of how many students at the end of each month had used the WaterFillz machines.
 - Signage and pledge publicity would be targeted to this group in the ways described in the preceding sections.

The role of convenience and external barriers

Mckenzie-Mohr acknowledges that many of the afore-mentioned tools target overcoming internal barriers to behavior change, and that some individuals may perceive certain behaviors as “too inconvenient” to adopt. However, once an individual gains exposure to an activity, or through the use of tools such as commitment or norms, external barriers such as inconvenience can usually be overcome.

How this applies to the bottled water campaign:

- Survey respondents highlighted the inconvenience of using a personal bottle as a major barrier.
 - Remove the barrier of obtaining a bottle: Provide free bottles to all first years
 - Create a norm of using the bottle: See the strategies listed above.
 - Install more hydration stations, and ensure existing stations are well maintained and clean.
 - This strategy will be pursued through participation in the Waste and Water Consultations.
- Overcoming external barriers can be costly. It is therefore important to investigate the success of similar programs.
 - One of the next steps for this campaign involves examining other universities and how they achieved bottled-water free campuses, including the role of distributing free water bottles and installing hydration stations.

CONCLUSION

This project has been both a satisfying and challenging experience. Our understanding of market research, data analysis and interpretation, and the structure of successful environmental campaigns has increased immensely. More importantly, we have produced meaningful information and amassed numerous tools to equip further efforts to create a more sustainable drinking water culture on campus.

This project originally had much loftier goals, which were eventually scaled back over the course of the semester. The initial project timeline involved conducting surveys within one week, launching a 'market test' campaign in November, and having a UBC branded bottle ready to launch for January. Clearly, this did not happen. As the project progressed, we discovered that each stage in a marketing campaign is highly time-consuming, and cannot be successful if rushed. Consequently, we do not feel as though we failed in our initial aims. Any items we had wished to tackle but did not have time for this semester will simply be addressed when they need to be addressed in the ensuing months.

There are many people to thank. First and foremost, we greatly appreciate all the support and mentorship from all our staff stakeholders: Nancy Toogood from AMS Food Services, Loriann McGowan from UBC Food Services and Justin Ritchie, AMS Sustainability Coordinator. We also want to give special thanks to Liska Richer, coordinator for the SEEDS program, for all her time and support in this project, Roxana Quinde for her undying enthusiasm and work to handle our project registration and evaluation, and Kelleen Wiseman, for agreeing to be our faculty supervisor even though she was occupied with a research leave this semester.

As has been previously mentioned, we are both optimistic and confident that this initiative will succeed. The elimination of bottled water from our campus is a metaphorical "low-hanging fruit" in the realm of efforts to lessen UBC's environmental impact. Furthermore, there exists an ideal convergence of administrative capacity and student support to ensure this transition occurs. The time is ripe to take this essential step towards a zero emissions institution.

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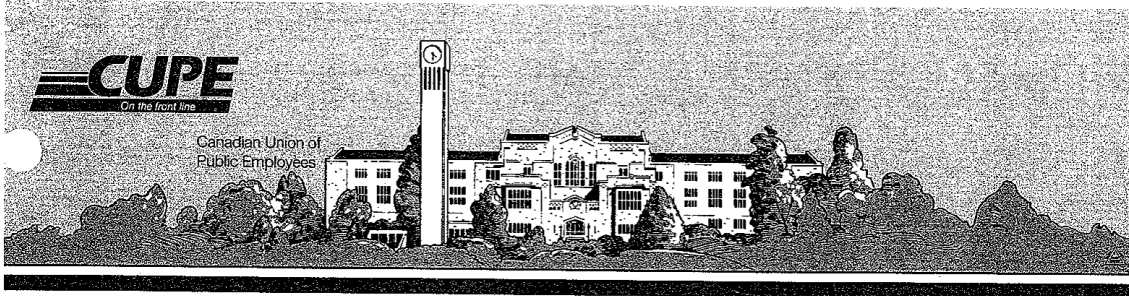
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APPENDICES

Appendix A: Letters between CUPE 116 and UBC Board of Governors



University of British Columbia Employees
Local 116

January 14, 2010

UBC Board of Governors
c/o Brad Bennett
Chair
6328 Memorial Road
V6T 1Z2

On behalf of CUPE Local 116, we are writing to encourage you to help build greener campus communities. As administrators, one concrete action towards this goal you can take is to ban the sale and distribution of bottled water on campus, while simultaneously maintaining, repairing and upgrading water fountains.

Public awareness about the environmental, health, social and economic impacts of bottled water is increasing, and the momentum to move away from bottled water and get back to publicly provided tap water is growing. The bottled water industry is less regulated than municipal water systems, consumes more energy and releases more harmful toxins into the environment than tap water. Indeed, bottled water sales are decreasing across Canada, reflecting this growing concern. Restaurants, school boards, municipalities and universities are all part of the growing movement challenging bottled water.

In fact, in 2008, the Federation of Canadian Municipalities (FCM) passed a resolution "urging" all members to phase out the provision and sale of bottled water in municipal facilities; to date over 70 municipalities have passed resolutions. In April of 2009, the University of Winnipeg became the first university to ban the sale of bottled water on campus, and in September, Memorial University (MUN) followed. Over 35 campuses across Canada have established "bottled water free zones" to ensure bottled water is not being purchased and alternatives such as the glasses, pitchers and reusable stainless steel containers are promoted.

By becoming bottled water free campuses and prioritizing safe and accessible public water systems, universities can take a leading role in innovated sustainability initiatives. Unfortunately, there appears to be a disturbing national trend that some academic institutions are beginning to decommission water fountains in older buildings and exclude water fountains in new buildings. We strongly urge you to ensure our university follows a more sustainable model by ending the purchase and sale of bottled water on campus – and becoming a bottled water free campus. In addition, we encourage you to install new water fountains and repair broken ones as well as commit to re-building, maintain and upgrading water infrastructure on our campus.

/2

We hope you will pledge to work along with students, faculty and staff to ensure that our university becomes a bottled water free campus and would be pleased to discuss this with you in further detail.

Sincerely,



Colleen Garbe
On behalf of the Executive Board
CUPE Local 116

CG/dg

cc: Paul Moist, President, CUPE National
Claude Généreux, Treasurer, CUPE National
Gunilla Öberg, Director, Institute for Resources, Environment and Sustainability
CUPE 116 Executive
CUPE 116 Stewards
Barry O'Neill, President, CUPE BC
Diane Jolly, CUPE National Representative
Elizabeth Hodgson, President, Faculty Association
Blake Frederick, President, AMS
Nancy Forhan, President, CUPE 2950
Geraldina Polanco, President, CUPE 2278
File

THE UNIVERSITY OF BRITISH COLUMBIA

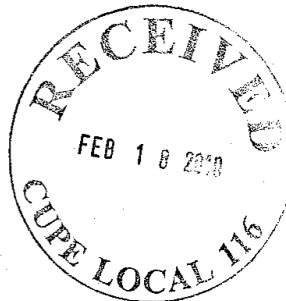


COPY
Colleen

Office of the Vice President
Finance, Resources and Operations
Old Administration Building,
6328 Memorial Road
Vancouver, B.C., Canada V6T 1Z2
Tel: [REDACTED]
Fax: [REDACTED]

February 16, 2010

Ms. Colleen Garbe
President
CUPE Local 116
209-2150 Western Parkway
Vancouver, BC
V6T 1Z3



Dear Ms Garbe,

Thank you for your letter dated January 14, 2010 which encourages UBC to address sustainable personal water consumption. We are pleased to received the letter and applaud CUPE for broaching the subject of bottled water on campus. UBC shares CUPE's concern about the environmental health issues related to this topic.

In general, UBC is considered a leader in establishing sustainability as a core institutional value. Over the past few years numerous staff and administrators have worked to find ways to increase the number of water fountains on campus. Activities have included finding funding to hire students to prepare studies, purchase and install new fountains, repair existing fountains, enhance student engagement, offer complimentary tap water at all Food Service outlets and change university standards.

With regards to water fountains, we have over 220 fountains in operation in academic buildings. Last year alone Building Operations performed maintenance to ensure proper working order on 65 of these fountains. While not policy at this time, new building development projects are being encouraged to incorporate water fountains into the design plans, however there are clear and challenging competing priorities for the limited capital funding currently available.

Regarding bottled water, the student group Common Energy has taken the initiative to develop a "Bottled Water Free Zone" Campaign, working with the UBC Waste Free Committee. As part of its student engagement program, the Campus Sustainability Office has been working with Common Energy and supports its efforts. Additionally, UBC is working with the GVRD on a campaign to promote consumption of tap water.

In terms of eliminating bottled water from our food service outlets, UBC Food Services supports the concept but has some legitimate customer service and financial concerns associated with this decision. Currently, bottled water is the highest volume cold beverage item sold on campus, both in outlets and in vending. Annually, campus customers spend over \$350,000 purchasing

over 178,000 bottles water from food outlets across campus. To put this in human terms, this equates to 4.5 full time food service positions from a gross margin perspective.

Moving ahead, UBC and UBC Food Services will continue to challenge its current business model and engage the community to reduce their dependency on bottled water. A few examples of initiatives are:

- Creating a pilot project whereby one outlet offers tap water only and provides associated marketing and education to the marketplace then assess the findings and expand the program to other outlets.
- Sell refillable "Place and Promise" water bottles and promote the already established complimentary tap water program.
- Undergo an analysis on financial impact and adjust food prices accordingly.
- Challenge other food operators (AMS, 3rd party operators) to do the same.

These and other related sustainability initiatives provide a foundation on which UBC will build goals and targets for a campus-wide water management system, which will be a key part of the new Campus Sustainability Plan. We anticipate development of this new Plan in the next year or so, and it will offer opportunities to collaborate with the campus community; we encourage you to work with us to shape our shared goals.

Sincerely,



Pierre Ouillet
Vice President Finance, Resources and Operations

cc: Andrew Parr, UBC
Reny Kahlon, UBC

Appendix B: UBC Water Fountains – March 2010

Building	Location	Notes
Barn - coffee shop		REPAIRED
Bio Sciences	By room 2512	NEW
Botanical Gardens	Lookout tower eastside near washroom	NEW
CEME	1214	REPAIRED
Continuing Studies ELI	Adjacent to the kitchen Rm B210G (main floor)	REPAIRED
FNS	Basement, corridor across # 30	REPAIRED
Geography	1st floor northside corner	NEW
Geography	2nd floor near kitchen	NEW
Hebb	1st floor near elevator	NEW
Hebb	2nd floor near elevator	NEW
Hebb	3rd floor near elevator	NEW
Hebb	4th floor near elevator	NEW
Hebb	5th floor near elevator	NEW
Hennings	2nd floor northwest corner	NEW
Hennings	3rd floor northwest corner	NEW
IRC	Main floor near elevator	NEW
Klinck	By room 199	REPAIRED
Koerner Library	4th floor	REPAIRED
Koerner Library	5th floor	REPAIRED
Lower Mall Research Centre	by room 341	REPAIRED
Macleod	Main floor near mechanical room	OLD (WORKING)
Macleod	2nd floor	OLD (WORKING)
Macleod	3rd floor	OLD (WORKING)
Macleod	4th floor	OLD (WORKING)
Macleod	near room 148	NEW
Macleod	near room 254	NEW
Macleod	near room 322	OLD (WORKING)
Macleod	near room 351	NEW
Macleod	near room 448	NEW (ALREADY DENTED)
Med A	Main floor, by room 2603	REPAIRED
Med A	Main floor, by room 2103	REPAIRED
Med A	2nd floor, by room 3108	REPAIRED
Ponderosa Centre	By room 8	REPAIRED
Scarfe (Classroom Block)	Basement near rm 1013	NEW (LOW PRESSURE - NEEDS REPAIR)
Scarfe (Classroom Block)	Main floor beside 1123	NEW
Scarfe (Classroom Block)	2nd floor beside 1217	NEW
Scarfe (Classroom Block)	3rd floor beside 1321	NEW
Scarfe (Lecture Block)	basement, beside JR 9B	NEW
Scarfe (Lecture Block)	Basement (2nd)	NEW
Scarfe (Lecture Block)	1st floor, beside room 108	NEW (NOT WORKING - NEEDS REPAIR)
Scarfe (Lecture Block)	2nd floor, beside room 205A	NEW (LOW PRESSURE - NEEDS REPAIR)
Scarfe (Lecture Block)	2nd floor, beside room 210	NEW (LOW PRESSURE - NEEDS REPAIR)
Scarfe (Lecture Block)	3rd floor beside rooms 300A	NEW
Scarfe (Lecture Block)	3rd floor beside room 310	NEW

Scarfe (Library)	Lower near elevator	NEW (LOW PRESSURE - NEEDS REPAIR)
Scarfe (Library)	Main floor near elevator	NEW (LOW PRESSURE - NEEDS REPAIR)
Scarfe (Library)	Upper floor near elevator	NEW
Scarfe (Office Block)	basement, by room 2006	NEW
Scarfe (Office Block)	1st floor, by room 2108	NEW
Scarfe (Office Block)	2nd floor, by room 2209	NEW
Scarfe (Office Block)	3rd floor, by room 2309	NEW
Scarfe (Office Block)	4th floor, by room 2409	NEW
Scarfe (Office Block)	5th floor, by room 2500	NEW (LOW PRESSURE - NEEDS REPAIR)
Scarfe (Office Block)	6th floor, by room 2619	NEW (NO PRESSURE - NEEDS REPAIR)
SUB	Main concourse -outside washroom 100F	NEW
SUB	Near Security Office	NEW
SUB	2nd floor northside near men's washroom	NEW
SUB	2nd floor southside near ballroom	NEW
Thunderbird Stadium	Main entrance	NEW
Thunderbird Stadium	Mens changing room	NEW
Thunderbird Stadium	Womens changing room	NEW
War Memorial Gym	Basement, by 19A, at southeast exit	NEW
War Memorial Gym	Men's changing room	NEW
War Memorial Gym	Near gym entrance	NEW
War Memorial Gym	2nd floor west side near stairway (by room 303)	NEW
Wesbrook	Main floor near building entrance (nthsie)	NEW
Wesbrook	1st floor outside Rm. 133	NEW
Woodward Bio-Medical Library	Basement, by room 12	NEW
Woodward Bio-Medical Library	Main floor near east side stairway	NEW
Woodward Bio-Medical Library	2nd floor, by men's washroom 202A	NEW
Woodward Bio-Medical Library	3rd floor by elevator next to women's washroom 351A	NEW

Appendix C: Tangible Solutions Water Use Survey

UBC Water Use Survey

common|energy

A. Please rate the following statements:

- | | |
|---|--|
| 1) Water fountains are easily accessible at UBC.
Agree 1 2 3 4 5 Disagree | 7) I would drink UBC's tap water.
Agree 1 2 3 4 5 Disagree |
| 2) Water fountains are easily accessible in the UBC building where I spend most of my time.
(What is that building? _____)
Agree 1 2 3 4 5 Disagree | 8) UBC should have more water fountains.
Agree 1 2 3 4 5 Disagree |
| 3) I prefer bottled water over water fountain water
Agree 1 2 3 4 5 Disagree | 9) I would be willing to pay slightly higher student fees for UBC to install more water fountains.
Agree 1 2 3 4 5 Disagree |
| 4) Water fountain water tastes better than tap water.
Agree 1 2 3 4 5 Disagree | 10) I would support a ban on selling bottled water at UBC and UBC Events.
Agree 1 2 3 4 5 Disagree |
| 5) Tap water is healthier than bottled water.
Agree 1 2 3 4 5 Disagree | 11) Filtering tap water (like at Irving K Barber) makes tap water safer to drink.
Agree 1 2 3 4 5 Disagree |
| 6) Bottled water tastes better than UBC's water fountain water.
Agree 1 2 3 4 5 Disagree | 12) Filtering tap water (like at Irving K Barber) makes tap water taste better.
Agree 1 2 3 4 5 Disagree |

B. Water Consumption

1) How many non-alcoholic beverages (including water) do you consume on campus daily? (In number of 561mL pop bottles) _____

2) About what percentage of that is water? _____%

Out of all the water you drink on campus, about what percentage of that is:

3) Tap/fountain water? _____%

4) Tap/fountain water from UBC? _____%

5) Commercially sold bottled water? _____%

6) Bottled water purchased on campus? _____%

C. Barriers

1. What do you think is the biggest barrier to drinking tap water at UBC?

- a) lack of water fountains
- b) water quality
- c) taste
- d) no refillable water bottle
- e) societal
- f) other

2. And the second biggest barrier?

- a) lack of water fountains
- b) water quality
- c) taste
- d) no refillable water bottle
- e) societal
- f) other

Age? _____

Faculty? _____

Year? _____

Income? \$ _____/year

Do you live:

a) On campus - Which residence? _____

b) With parents or relatives

c) Off campus

Comments:

Thanks for taking the time to do our survey!

Appendix D: Tangible Solutions Water Use Survey Comments

NOTE: I actually graduated a year ago. I filled out this form based as if I were filling it out a year ago.

I am from the US, and was really surprised at how few water fountains there were at UBC. In the US, essentially all washrooms have a water fountain outside of them, plus there are many in more random locations; you kind of can't help but trip over a water fountain. In the CS building, there is one fountain on the 5th floor, and one fountain in the women's washroom in the basement. Not exactly convenient. Other buildings have a similar lack of fountains.

Another bad thing is that there are still (err, were a year ago) a number of fountains (e.g. the ones in the main concourse in the SUB) which warn that you should run the water for a minute before drinking from them. Apparently those are pure bunk, but nobody has taken down the signs! (I thought of taking down the signs, but didn't feel like I had the authority to do so.)

I would fill my (reusable) water bottle from the washroom near my office, but it always felt slightly icky to do so, probably from cleanliness taboos.

It's really frustrating that students are forced to buy water on campus or bring their own from home. Water fountains should be accessible to everyone on campus. If there are any imperfections in the water they are not even comparable to the rampant bacteria and disease in much of the water around the world. We're lucky to have such a fresh water source, right here in Vancouver; let's utilize it instead of wasting money and polluting our environment and bodies with bottled water. It's actually embarrassing that UBC doesn't have easily accessible water fountains. Elementary and high schools provide water for their students so why shouldn't a university?

Thank you for this important survey. I am a person who has one re-usable water bottle that I replace annually. I drink tap water and boiled tap water from my home's kitchen water tap.

The water at UBC is undrinkable due to taste and sometimes smell. I am not sure why this is but it must be due to piping issues. Are we on the GVRD water grid or are we using some other source? I do not know why UBC, with its location in a rainforest across a bay from snow-capped peaks and glacier mountains, cannot manage to get the same good-tasting, high quality, mountain spring drinking water that the rest of the GVRD enjoys. Your help in solving this mystery would be most welcome.

Were UBC's drinking water quality to rise to the level enjoyed by most of the GVRD, I would refill my bottle at UBC instead of at home. I would not, however, use drinking fountains - they are slow or impossible to use when filling a large water bottle. Moreover, they are unhygienic.

Thank you for considering my comments in your research.

ANSO just got the water fountains fixed last year because some students started a petition. I couldn't believe that the University would not fix the fountains earlier by themselves without having the students asked for it. The only tap water available to undergrad students in the building was tap water from the restroom, and it tasted awful and was mostly warm. Thanks for looking into that issue, and hopefully, if plastic bottles don't disappear, we can at least get more fountains for those who want to use them.

When I say that for example I strongly disagree with "4) Water fountain water tastes better than tap water", I mean that it's the same taste to me, not that tap water actually tastes better. This type of question would have been better worded with a bipolar scale: "Which tastes better?" with a scale from strongly tap to neutral to strongly bottled.

Also, to explain my answers in part C, I think the problem is societal because everyone has reusable water bottles, it's just that most people don't carry them around. I identified lack of water fountains as a second cause, not because of their number (there are enough fountains) but because they very often aren't working.

Thanks for your efforts to reduce bottled water usage at UBC!

I support having more water fountains on campus, but at the same time I wouldn't support a radical ban on not selling bottled water on campus. There are people with chronic illnesses who need to make sure that no microbe or bacteria is in the water or liquids they drink, so in that case bottled water is the safer--and sometimes the only--option. In thinking of ways to make UBC more sustainable and environment-friendly, please don't forget to keep in mind the needs of people with invisible disabilities.

I would never actually drink from a fountain because the water never comes out high enough, and the idea of my mouth touching the fountain base is disgusting. However, I frequently refill my water bottle from fountains.

If UBC installs more fountains I would like to see ones in which a much higher stream of water comes out because it is hard to refill a water bottle at the current fountains.

Also, I think this idea is fantastic! The idea of bottled water in BC is ridiculous, the bottled water is simply water from BC's glaciers, the exact same place we get our tap water!

The people who regularly buy bottled water usually will not drink water from a sink/tap-- especially not washroom taps (which are the only ones in my department building). However, my department building has a basic water machine (the kind with the big cylindrical tub of water on top and two taps on the stand) in the graduate/faculty lounge, and it gets a LOT of use. People who would normally buy bottled water drink water from the machine instead.

The water fountain from Irving K Barber is so much better compared to the water from Math Annex. There's no weird taste from Irving K Barber while it doesn't taste good in Math Annex. Although I spent most of my time in Geography building, I've never drank water from there before because the Irving fountain looks cleaner and it indeed is really good.

Vancouver has some of the best tasting tap water of anywhere I've lived and visited - if people are complaining about taste, maybe UBC should look into whether building pipes are affecting the taste of tap water in specific buildings.

I think \$\$ would be better spent on making tap water accessible for refilling bottles (e.g. a sink that is deep enough to put a bottle in under the tap) and on campaigns to promote refillable bottle use (e.g. why not put a bottle in frosh packs?) and teaching people about the truths about how bottled water measures up in terms of health and environmental issues, than on putting in more water fountains.

Please please please ban the sale of bottled water on campus!!!

I think this is a great idea to ban water bottles. I live on the north shore and recently purchased a water filter from "your water matters" a well-known store for personal water treatment in Vancouver. It has made a huge difference in my life because I no longer waste money on unhealthy bottled water. I don't think people realize that bottled water is just municipal water anyways, and that you rarely know exactly how that source is monitored. We are so lucky to have such good quality tap water in Vancouver, and with the right filtering you also have exceptionally clear water free of turbidity and chlorine!

My only concern is that I am always hesitant to drink from public fountains because I don't want to put my lips to them. However, I really like the ones that you can use to fill your water bottles because I doubt people put their lips on them. I think it is a good idea to have both of them on there!

I think that although there are fountains on campus many of them have signs that say it is necessary to run the water for a minute before drinking - this does not lead students to think that the water is of high quality. Secondly, many of the fountains are either not functioning well (i.e. there is not enough pressure to allow the water stream to be high enough to fill a water bottle), or in the case of the water fountains in my building, the water is warm from the fountain. I strongly support banning bottled water on campus and I do agree that more fountains are necessary, but I think that the existing fountains also need to be looked at and improved.

It would be nice if people would realize that there is nothing wrong with drinking tap water! It's ok to buy bottled water once in awhile for convenience, but really, especially in Vancouver, it's incredibly wasteful- all that plastic, and energy wasted in production, transport etc; not to mention annoying when people insist that bottled water is so superior. Vancouver's tap water has consistently been ranked among the best in the WORLD, and it is therefore actually quite arrogant to claim that it isn't good enough to drink. Furthermore, several bottling companies actually bottle their water in Greater Vancouver: Langley, Surrey, and etc...I even heard rumors of one bottling plant in Burnaby. If people knew that their premium "Canadian Springs" bottled water was actually just bottled Burnaby tapwater, I bet they wouldn't be nearly as insistent on exclusively drinking bottled water!

I think this is a great idea overall. It will be great for the environment and hopefully better for UBC as a whole. I'd be worried about not selling any bottled water at events just because hydration is very important, however if you can find another way of making sure water is readily available then I fully support this.

I don't usually buy bottled water, I consider it a waste of money. Unless of course I am desperate and need water when I have none around, like when working. In those cases I will usually buy bottled water. But in general, I already don't buy bottled water very often.

It's a meaningful survey

need more filters, water quality and taste are the most important

go team!

I FULLY support a ban on bottled water!

Thank you for all your work! I hope we can make UBC a bottled water free campus!

some buildings like hebb have no water fountains--lame.

I agree with banning single use water bottles. I would like to see more filtered water on campus for refilling water bottles brought from home.

I support prohibiting the sale of bottled water at UBC. I want to see more water fountains and more readily available filtered water on campus.

Some of the drinking fountains are off limits because of contamination. We have to ensure they are safe to drink from! We use Brita filters and tap water in my department.

"I don't need water fountains, tap water from wash rooms works just as well.

That it is possible to refill from those (i.e. that a standard water bottle "fits" under the tap) is more important than water fountains as taps serves multiple purposes (and therefore serves both energy and money).

The taste could be improved though (use other ways than chlorine).

I use a filter at our lab. Filtered water fountains like the one in the SUB are great.

"I will not drink out of water fountains because I'm afraid of germs. I bring a refillable water bottle with me everywhere. I would like to see taps set up specifically for filling water bottles with cold, filtered water. Like at the SUB.

If you're going to ban selling water (which I think is a good thing) then water needs to be easily accessible everywhere."

I would support any initiative that removes bottled water off campus forever. It is so harmful to the environment, creates so much waste and is incredibly unnecessary in a province where drinking water is so abundant.

potable water is a necessity, not a luxury. why do we have to fight so hard to get something everybody needs?

where do water coolers fit in? i get 25% of my water from water coolers at work.

Water fountains are so far and in between here. We need to cut that deal UBC has with coca-cola b.s. out of the picture and promote better health habits of drinking water and not high fructose corn-syrup drinks.

"Please install more filtered water fountains on campus!

There are seriously like 2 fountains at all of UBC"

Its commendable that you are doing this.

I support the ban on water bottles! I also support a ban on styrofoam material usage!

Since I got here I have been disappointed with the lack of water fountains campus wide. Lets get some more installed and cut down on the plastic!

I am very supportive of the phasing out of bottled water at UBC :)

There wasn't an option to specify this but I get most of my water from the water coolers at my college.

I bring my beverages (water) from home in a reusable water container. I have a WA-2 water filter system at home that I use.

I have a huge issue with fountains mainly because people like to leave trash in them, spit in them and make them seem very dirty. If this weren't the case AND the water tasted better I would use them more often.

I bring my own water in a reusable bottle from home, hence, I don't really drink fountain water. I also choose not to drink water from school because I always feel that the fountain nozzle is unclean.

I am in complete support of making UBC a bottled water free school. More awareness should be made in support of drinking tap water as opposed to bottled water.

The new buildings with water fountains, including the libraries (k barber and koerner) are awesome. The older buildings with water fountains, such as hennings and the geography building taste like copper, which tastes gross.

"I would LOVE LOVE LOVE to see less/ no bottled water sold at UBC!!!

However, at UBC events I think it probably should be, because:

a) We should be encouraging the consumption of water, especially at events where there's alcohol

b) If somehow there is tap water sold/ given out to people at the event, it would probably be in plastic/paper cups anyways"

I would love to become involved with this campaign. I worked in Seattle to pass a citywide ban on polystyrene (Styrofoam). That should be our next step.

Water fountains should be installed, if they are not already in place, and available in all faculty buildings

Ban bottled water, and make that that when you do, you advertise whatever changes have been made in a way that will get the students on board and remember to use the water fountains!

Bottled water should absolutely be banned! Many of those who drink bottled water need to be educated on the fact that tap water is not harmful (not in Canada at least), and alternative options should be promoted.

Appendix E: Market Research Survey Questions

Water Bottle Usage and Preferences Survey

1. Do you own AND use one or more water bottles?
 - ☐ Yes
 - ☐ No
 - If No, skip to question 4
 - If Yes, please answer the following questions:
2. When did you start using your own water bottle?
 - ☐ This year
 - ☐ Last year
 - ☐ Several years ago
 - ☐ A long time ago / since always
3. What made you start using your water bottle?
4. Which of the following are reasons why you do NOT use a personal water bottle?
 - ☐ Cost
 - ☐ Inconvenience of carrying a bottle
 - ☐ Uncertainty about quality of tap water on campus
 - ☐ Never thought about it
 - ☐ Haven't gotten around to it
 - ☐ Too lazy to make the switch
 - ☐ Can't find a bottle I like
 - ☐ Don't drink enough water to need one
 - ☐ Other: _____
5. What are a few characteristics of your ideal reusable water bottle? _____
6. What is the price range you would pay for a water bottle? (\$__ - \$__)
7. What size of water bottle do you prefer to use?
 - ☐ Less than 0.5 L
 - ☐ ~ 0.5 L
 - ☐ ~ 0.7 L
 - ☐ ~ 1 L
 - ☐ More than 1 L
8. What do you prefer for your bottle looks-wise?
 - ☐ Plain / one color
 - ☐ Graphics (designs, slogan, logo, etc.)
 - ☐ No preference
9. Please select the types of water bottles you would use:
 - ☐ Stainless steel
 - ☐ Hard plastic
 - ☐ Bio-based plastics
 - ☐ No Preference
10. If there were any materials you were NOT willing to use, please explain why: _____
11. Please select the types of bottle lids you prefer:
 - ☐ Screw-cap
 - ☐ Screw-cap with strap attached to bottle
 - ☐ Pop-top
 - ☐ Other: _____

Water Consumption Behaviors and Preferences Survey:

1. Have you heard of the new WaterFillz stations? Yes or No
2. Have you used them? Yes or No
3. What do you think of them?
4. How available are water fountains on campus? UNAVAILABLE 1 2 3 4 5 AVAILABLE
5. Have you used them?

6. What do you think of them?
7. Would you fill your water bottle using a sink tap on campus (not in a bathroom)? YES NO
8. Why or why not?
9. If you were to drink tap water on campus, do you require it to be filtered, prefer it to be filtered, or have no preference?
10. At what temperature do you prefer to drink water?
 - Ice cold
 - Chilled
 - Slightly Chilled
 - Room Temperature
 - No Preference
11. If there were adequate alternative ways to obtain clean, safe water across campus, would you support a ban on bottled water?
 - Yes
 - No
 - No Opinion

Appendix F: Insights on Communication

From Fostering Sustainable Behavior and the Psychology of Climate Communication

Fostering Sustainable Behavior:

Effective messaging must capture the targets' attention. To do so, the information presented should be "vivid, concrete and personalized" (Mckenzie-Mohr, 1999).

To make messaging personal: Focus on the cost to the individual consumer of purchasing bottled water, the waste generated locally by single-use bottles or how other individuals in the community have already been successful in using their own bottle. Furthermore, it can be beneficial to set individual or community targets for adopting a certain behavior. For bottled water, this could mean publicizing a target of 30% fewer bottles purchased by the end of the 2011/12 school year, for example.

To make messaging vivid/concrete: Messaging is important because the information it gives will distinguish itself from the deluge of other messages, thereby increasing the chance that the information will be recalled. To vividly portray the amount of waste generated by a community, consider using a well-known local landmark. A figure about waste can then be presented in terms of its relation to the size of certain buildings. For example, the amount of waste created from bottled water could be related to buildings such as Irving library, the bus loop, the Sea-to-Sky highway etc. Another idea is to create some sort of diagram that puts the impacts of bottled water into material perspective, like a depiction of how much water and oil is used to produce one bottle of water in units of bottled water volume.

Life magazine recently vividly portrayed our consumptive lifestyles by taking all the possessions of an American family and placing them on the front lawn of their house. Next to this picture was a picture of a family from the Third World, once again with all of their possessions placed in front of their home. The contrast in lifestyles and the attendant impacts upon the environment were blatant. For bottled water, a similar display could be made illustrating the waste generated in 1 week by a student who drinks bottled water versus the waste generated by a student who does not drink bottled water

Other suggestions on messaging from Mckenzie-Mohr (1999):

- Know the intended audience and what they do and do not support: vital because messaging should neither be too aligned with existing beliefs/behavior nor too extreme so as to alienate the audience. In other words, the message should be "slightly more extreme than the beliefs of your audience".
- The credibility of who delivers the message is a significant factor: if possible, have institutions or organizations perceived as "credible" by the audience "endorse" the project, in order to make the project seem more legitimate
- Framing: "Messages which emphasize losses which occur as a result of inaction are consistently more persuasive than messages that emphasize savings as a result of taking action". This advice is also offered by the Center for Research on Environmental Decisions, who suggest people would rather avoid loss than seek gain (2009).
 - For bottled water: this could again mean emphasizing the financial drawback to buying single-use bottles, emphasizing the damage incurred through the additional waste generation etc.

- The use of threatening messages: “threatening messages are a necessary part of directing people's attention to crises. However, they are likely to be counter-productive if they are not coupled with messages that are empowering. Further, repeatedly presenting a threatening message can cause people to habituate to the message. Once people understand the "crisis," it is wise to move primarily or exclusively on to dealing with the solution”. This idea echoes De-Shalit’s argument that environmentalists tend to exaggerate the severity of a particular environmental woe and employ talk of “dire consequences”, which tends to back-fire, by creating debilitating fear, or by simply causing people to doubt or ignore the message (2001).
- Foster “social diffusion”: refers to the process whereby individuals are more likely to adopt new behaviors if introduced to the idea by friends, family or co-workers. An easy way to encourage social diffusion is simply “to advertise the names of people who have made a commitment to carry out a new activity”.
- Provide feedback: new behavior is more likely to become permanent if impacts of the newly adopted behavior is well marketed.
 - For bottled water: the WaterFillz’ counters are an effective means of providing this feedback. Other ways might be to post signs adjacent to vending machines showing how much money or oil is saved per amount of bottles not bought, or a “thank you” sign placed above a water fountain, to provide positive re-enforcements for this behavior

The Psychology of Climate Change Communication:

Framing: “setting of an issue within an appropriate context to achieve a desired perspective or interpretation”.

Why do this?

- Frames organize central ideas on an issue
- Can help condense an issue into useful shortcuts i.e. slogans, images, references
- Can help communicate why an issue is problematic, who is responsible and what might be done

Promotion vs. Prevention Frame

- Promotion focus: people with this frame want to make something good happen, wish to maximize/increase gains
- Prevention focus: people with this frame want to prevent something bad from happening, wish to minimize/decrease losses and maintain status quo
- Important to employ both promotion and prevention frames when communicating an issue
 - i.e. show that drinking tap water is beneficial because it reduces ___ many emissions, saves ___ amount of money AND that drinking bottled water is negative because of the waste created, the questionable safety and claims of the product etc.

Local Frames

- In order for a broad issue, such as the commodification of drinking water or dwindling resources, to be seen as relevant, people need to see the problem as applicable to their immediate settings
- Mix local with national

Now versus Future Frame

- Make climate change an immediate risk rather than future risk (which people tend to discount or give less priority)- tendency to heavily discount future larger losses
 - I.e. ask people to make future commitments (but with mechanisms to enforce them) - easier to stomach