

# Table of Contents

Section #	Section Name	Page #
1	MEMORANDUM and Brita Hydration System Worked on by Kristin Leverone	4
2	Plastic Bottle Energy Source Worked on by Billy Karavasilis	9
3	What are other Colleges doing? Worked on by John Petitto	16
4	What we are already doing? by Kristin Leverone	20
5	What do students want? by John Petitto	22
6	What's Wrong with Water Bottles? & Creating a New Water Bottle Design! by Nicole LaRosa	28
7	Plastics and Ecology by Abrom Shepard	37
8	Let's Fundraise! by Alexander Schwartzberg	41

# Brita Hydration Station

<http://www.britahydrationstation.com/>

## What is a Brita Hydration Station?

The Brita Hydration Station is a water bottle refill station that can be used on college campuses. This system can be installed on almost any wall surface. The Brita Hydration Station system is a filtration system that "a carbon-based filter that reduces lead, chlorine taste and odor, and removes cysts from municipal tap water" (britahydration).

## How does the Brita Hydration Station Work?

The Hydration station is a touch free system where all someone has to do is place a water bottle underneath the nozzle and the system senses the bottle and dispenses water into the reusable water bottle. The system has a 30 second release so that no water is wasted. There is also an auto plug; this allows the system to filter every 24 hours so that there is always fresh filtered water. There is also a chilled water option.



## The Installation of the Brita Hydration Station

See the reference chapter page for the installation guide. This gives the complete step by step on the installation of the Brita Hydration Station.

## The Maintenance of the Brita Hydration Station

This system does not have hard or difficult to maintain the Brita Hydration Station. There are concealed hinges which allow the upper panel to open easily, which allows access to the critical maintenance components. Once it is open, the unit's power automatically shuts off immediately. When the power is off the drain grate can be cleaned out quickly and easily (BritaHydrationStation.com). "In addition, a filter indicator replacement light on the front panel signals the condition of the filter cartridge, which can be quickly removed with a quarter turn without turning off the water supply" (BritaHydrationStation.com).

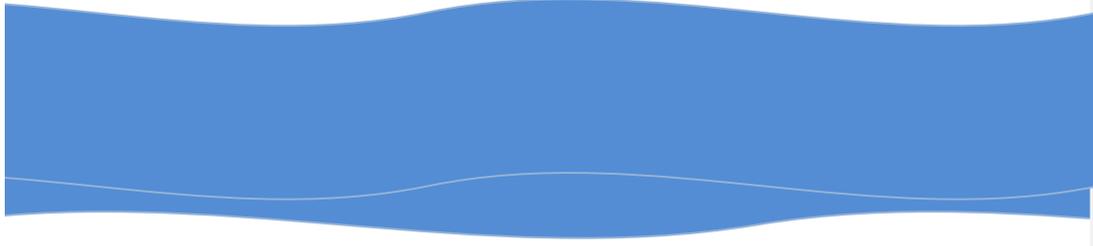
## Where can we put Brita Hydration Stations on C.W. Post Campus?

After searching the campus and seeing where the most high traffic locations are on campus.

1. Hillwood Commons second floor by the bathrooms

2. Hillwood Commons first floor by the pioneer room
3. Humanities first floor main entrance
4. Life Science by the pod
5. Pell Hall Main entrance

These five locations are great to get started. The long term goal would be to have these stations next to all regular water fountains on campus. These five locations gather the most traffic throughout the day and are spread out enough that where ever you go on the main campus you can go to a station to get great tasting water without paying through the roof for. By the end of the transformation of these Hydration stations on campus we would also like to see them in residence halls as well. Having refill stations in dorms would decrease the amount of plastic that dorm students bring in as well.



MEMORANDUM  
The Water Bottle Project:  
Proposal of making recyclable  
water bottles a thing of post past.

S  
E  
C  
T  
I  
O  
N  
  
1

# MEMORANDUM

To: Provost

From: Students of Professor Scott Carlin's American Urban Planning class Spring 2011

Date: May 2, 2011

Subject: Water Bottle Project

This proposal is in response to an assignment in our American Urban Planning class which we had to think of a way C. W. Post Campus can become more sustainable. C. W. Post has been working on becoming more sustainable with many different projects but there is still more to be done. While using our senses we see that many students pay for water even though there are water fountains, we see water bottles being thrown away, and in Hillwood we see that reusable water bottles are being offered to the students but no one buys them. What we don't see on campus is the promotion of reusable water bottles, the use of reusable water bottles and ways to refill water bottles throughout the campus.

We intend to provide you with an informational overview of what C.W. Post can do to increase the sale of reusable water bottles and decrease the sale and use of water bottles; so that our campus can become more sustainable. The following proposal gives detailed examples of: what filters and plumbing hardware we can install, ways to educate students, information about successes at other colleges, and fundraising opportunities to cover the costs of this project. We will discuss the use of the products and what the school needs to do to ban the sale of non reusable water bottles a reality not just an idea.

## **Background: Student projects can become a reality.**

C.W. Post Campus has spent a lot on water bottles in the past nine months, and students have purchased about 21,960 water bottles which is about 610 water bottles per week; which is the equivalent to the length of 13 empire state buildings. All these numbers are very upsetting to hear when we say are working on becoming sustainable. This campus sells reusable water bottles but where is the promotion for them, who buys them and what can students get out of buying these water bottles. The project that we have worked on will change the numbers of non-reusable water bottles to numbers that are a lot lower and increase the number of reusable water bottles on campus. The way that this can be achieved is by implementing our proposal on the water bottle project.

In our American Urban Planning class led by Professor Scott Carlin we have done research, observation and questioning to discover how we can make our campus more sustainable by

increasing the use of reusable water bottles and the decrease on one time use water bottles. We believe that this can become a reality and could put our school on the map. Our idea is something that a large amount of students would like to see as well as faculty members, which you will find later in the proposal.

### **Benefits: How will this project help our campus?**

The saying “Reduce, Reuse, Recycle” has been around for a while and our school has been working on the recycle part but that is only one of the 3Rs. The first two R’s are also important seeing that they are first in the saying. The benefit of promoting reusable water bottles instead of recyclable water bottles is that we can become a more sustainable campus. With reducing the amount of water bottles purchased to sell to the students will help with cost on campus. Short term there will be start up cost to put the system in place but we have come up with fundraisers to minimize the cost for the school. Once the new fountains are in place we will be able to make more money on the reusable water bottles. Now the cost for the campus will be \$0.01 to fill up one reusable water bottle at the fountain. Long term the school will make money of this project and more students will come to C.W. Post when they hear about how cheap it is to get water and that our campus is sustainable.

### **Our Goals: What we aim to achieve?**

1. Get filtered water fountains that can accommodate reusable water bottles  
Short term goal: By the end of Fall 2011 we would like to get one filtered water fountain in Hillwood that can accommodate reusable water bottles.  
Short term goal: By the end of next year we would like to have one in each of the main buildings (Pell Hall, Library, Humanities, Pratt Recreation, and Khan Building).  
Long Term goal: Hopefully within the next five years we would like to have one in every building on campus including the dorms  
End of Project goal: Within 10 years we would like to have several in each building just as there are regular water fountains.
2. Create water bottles with our schools logo in them  
We would like to sell water bottles on campus with our schools name on it (which you can find the design later on in the proposal) so that we still make money for the school and students can have more post pride. The more you see the schools’ name the more students will have school sprite
3. Work with Aramark to reduce the cost for fountain drinks when filling up a post water bottle  
With this goal we would like to work with Aramark so that anyone that has the post water bottle that has the project logo with the schools’ name it can get discount on fountain drinks. This will promote the sale of the water bottles and the reduction of the plastic bottles.
4. Reducing the amount of water bottles on campus  
Short term goal: Sell 100 of the reusable water bottles and cut the amount of student purchased water bottles by at least 1000 bottles.  
Long term goal: Get most of the campus carrying reusable water bottles and reduce the amount of plastic water bottles purchased to almost zero.

With this project we understand that we cannot completely get rid of plastic water bottles but we would like to at least reduce the amount purchased, and increase the amount of reusable water bottles. We still want people to recycle their plastic recyclables.

### **Feasibility: How will this work? Can this project become a reality?**

Some of these goals will be achieved easier than others but all can be accomplished with campus partnerships with students, faculty, administration, and campus vendors. Some goals are short term and some are long term. In order to become a sustainable campus which is the future we all need to work together. In order to complete our proposal we will need to work with facilities to show them the three options we have and see what they think is possible on their end and what they would need to do. The options that we have provided for facilities; we have done some extensive research on. With these options there should not be too much more to be done except call some of the places for an estimate of the product because we as students could not get an estimate for all options that we can bring on campus. Aramark will need to work with us so that we can sell the reusable water bottles. We have done the research on the type, design and cost of the water bottles so all that Aramark needs to do is allow students to purchase these water bottles at any of the food places on campus. We also figured out how much they could be sold for. In order for this project to work we need to have great advertisement. In order to advertise enough for people to notice we need all departments to work with us. Public Relations to send out emails, Aramark to have signs hanging up and the cashiers to ask the students if they would like to purchase one of the bottles, all of the academic departments to tell their students, and finally we would need the clubs especially SGA (Student Government Association) to tell their members about the project.

### **Procedure: What we have done and what still needs to be done.**

All aspects of the procedure are elaborated on with graphics and references in the rest of the proposal.

What we have done before sending out this proposal so that you have the right information on the feasibility of the water bottle project.

1. Surveys: We surveyed the student body on campus through a survey monkey program asking six questions. The six questions targeted what students' experiences are with purchasing water bottles to what they would like to see change on campus. These questions and results are produced for you later on.
2. Researched colleges in the United States and Canada: What they tried to do on their campuses to reducing recycled water bottles and instead promote reusable water bottles. We see what works and what does not work.
3. Researched water refill stations: What is out there for the school to purchase that will allow students to refill their water bottles anywhere on campus.
4. Researched water bottle purchases: how much the school has sold in the last nine months. While looking at the amount of fuel and water that is used to transport and make a plastic bottle.

5. Types of reusable water bottles: We developed a logo for the water bottle project with the post name on it. This will help get students to purchase the reusable instead of plastic water bottles.
6. Fundraising: Developed great fundraising ideas for the campus to raise money for this project.
7. The Cost Breakdown: What is the environmental cost? What do we spend now?

We have done most of the research and preplanning for this project but there is still work to be done to make this project idea a reality and for that to happen we need the rest of the Post community to accomplish our goals that we have set.

1. Talk to facilities: Showing them what we have and see what they believe they can do. The Facilities department is key in the installation and of maintaining of the system of this project.
2. Talk to Aramark: Show them our idea for selling water bottles by giving them the research that we have done and how we can make them money. We need Aramark to approve the design of the water bottle and selling them in all their locations on campus.
3. Fundraise: to reduce the cost of the refill stations we need to fundraise.
4. Install the refill system of choice
5. Promote, promote, and promote some more: We need to get students on campus to know about the reusable water bottles and where they can get them. There also has to be a promotion on where they can refill and how much they will be saving.



Plastic Bottle Energy Cost:  
Post current figures on what  
students spend, the  
environmental and financial  
cost to use plastic water bottles

S  
E  
C  
T  
I  
O  
N  
2

# Forward

Environmental sustainability is a major goal for every society in our modern world. There is a consensus among both developed and developing nations across our world that more needs to be accomplished in order to reduce our ecological footprint on Earth. There are several areas that need to be researched and addressed in order to fully understand and take the necessary steps to curb the impact we have on our environment.

One of the leading concerns we have today on our environment is that the world is fundamentally driven and functions on the basis of energy – specifically, the entire world is dependent on oil production in order to meet our energy needs. However oil is a non-renewable natural resource, and our rapidly increasing dependence on this natural fuel is exceeding the supply of this valuable fossil fuel.

The environmental implications of using oil to meet our energy needs are great – burning fossil fuels introduce harmful toxins and pollutants into the atmosphere, including carbon dioxide gas, a constituent that amplifies the greenhouse effect and warms the mean atmospheric temperature, one of the reasons why global climate change is occurring today.

Mitigation techniques have been already placed into effect by many industrialized nations, which include greenhouse gas abatement by reducing their dependence on oil. Reduction of greenhouse gas production can be met in several ways, but one extremely effortless way of doing so is by limiting or ending the use of oil to produce plastics – a synthetic material that is used in packaging for practically everything all over the world.

As an institution of higher education, C.W. Post serves as the first tool in educating the future generation, the ones who will have many current environmental issues in their hands next. Our vision for what C.W. Post should strive to accomplish is a reduction of plastic water bottle use campus wide that will ultimately lead to a ban of plastic bottles – deeming it one of the first Universities in the United States to be plastic bottle-free.

There are three basic themes that need to be studied in order for C.W. Post to effectively reduce its ecological footprint, and once they are successfully understood and met, the benefits of attaining our goal are exceptional and far outweigh any costs associated with the action taken.

Understand the current data and environmental costs associated with plastic water bottle use at C.W. Post.

Research the financial expenses associated with plastic water bottle use at C.W. Post

Calculate the environmental and financial savings of C.W. Post if plan is implemented.

## Current Figures- Water Bottles

Any individual who enters one of C.W. Post's main buildings will immediately discover that environmental sustainability is on the agenda of C.W. Post. The assumption can also be made that the university holds its "eco-friendly" practices to a high degree of importance, which in turn, keeps it up to par with other institutions across America, and the desire to be a greener force in the world.

It can be argued that it is extremely crucial for the campus to portray itself in this light because a major portion of perspective students will research whether or not the college they are interested in attending comes across as a 'green' institution of higher education. Hillwood Commons, a highly frequented building by students and visitors alike, is adorned with posters and fliers advertising the campus' recycling efforts and locations of recycling bins that sort the various types of waste materials including those of which are produced by the consumption of food and beverage, distributed and sold by the campus' very own cafeteria, vending machines, stores, and so on.

Although C.W. Post has increased its effort in reducing its own impact on the environment over the years, there is still more that can be done to further decrease our footprint on the environment. As mentioned previously, one of the three major points C.W. Post must understand is the current data and environmental costs associated with plastic water bottle use at C.W. Post. Plastic bottles are a major constituent in waste production, and it is important for the university to understand where it stands in regards to its contribution to plastic waste.

According to Shawn Carvajal, the director of food services for C.W. Post Campus provided by Aramark, the university has purchased 915 cases of bottled water in the last 9 months. This number further breaks down to a substantial 21,960 water bottles in 9 months, 2,440 bottles of water per month, and 98 bottles of water per day.<sup>1</sup>

For a 24-bottle 20-ounce case of water, the purchase price is approximately \$18.95. In the course of 9 months, water bottle purchases *alone* costs the university an astounding \$17,339.25. The campus sells each bottle of water for a price of \$1.75, with revenue of \$38,430. In total, the campus had made a profit in water bottle sales of about \$21,090.75.

While for most people a profit of roughly twenty one thousand dollars is extremely enticing and completely un-negotiable in terms of completely banning the sales of plastic bottled

beverages across the campus, on the contrary, the financial savings and profits the campus could potentially experience far exceeds the profit for continuing its “business as usual” mentality.

If the university ends the sale of plastic water bottles alone, it would eliminate the \$17,339.25 it costs to purchase them in the first place. With the combination of ending the sales of plastic water bottles, and promoting the sale of C.W. Post’s reusable beverage mugs, the campus will exhibit a much greater ratio of earnings when compared to just the sale of regular plastic water bottles.

## **Environmental and Financial Cost**

Given the staggering costs of purchasing plastic water bottles for consumption, this proves that the water bottle industry has grown to enormous proportions because of the profits to be made. But why should any person on Earth be interested in buying water – a relatively abundant natural resource that is completely free for drinking? Bottled water companies have packaged water into plastic bottles for convenient consumption – people all over the world are attracted to the convenience of portable water and easy storage that they are willing to pay for a naturally free resource.

To put into perspective, in 2003, Americans spent more than \$7 billion on bottled water at an average cost of more than \$1 a bottle. With a simple math calculation, this figure translates into an estimated 7 billion plastic bottles of water in 2003 *alone*<sup>2</sup>, and does not take into account the billions of other plastic packaging used for food products, shopping bags, utensils, soda bottles, containers, wrappers and other plastics that are produced on a daily basis. For a more clear understanding of how substantial the amount of plastic waste this produces, the 2001 report of the World Wide Fund for Nature details that roughly 1.5 million tons of plastic are expended in the bottling of 89 billion liters of water each year.<sup>3</sup>

Some supporters of reusing plastic bottles that were once used for bottling the original water beverage might bring to light the idea of washing out old bottles to refill with the beverage choice of the consumers. In fact, the authors of the 2001 World Wide Fund report also suggest that water bottles should be washed and reused in order to reduce the negative impact they have on the environment. However, reusing plastic bottles risks the quality of the water because phthalate, a harmful chemical that poses numerous health risks to the human body leaches into the water as the bottle gets older. Given that bottled water is extremely expensive when compared to the cost per gallon of tap water, tap water is more economical and the healthier.

Concerns over the quality and safety of drinking tap water ultimately started the growth of the now multi-billion dollar behemoth bottled water industry, and those concerns have not yet dissipated. With the introduction of new, more efficient water filter technology, consumers of tap water are now able to safely and effectively remove more potentially dangerous pollutants from the water than other purification methods and are specifically designed to treat some of the worst polluted municipal water.<sup>4</sup>

Most of the expenses associated with bottled water are derived from the costs of producing the plastic and transporting the finished products, both of which include the use and the burning of the fossil fuels, oil and gasoline. The amount of carbon dioxide that is produced in order to manufacture and transport plastic bottles for public consumption increases at an exponential rate, further contributing to the growing problem of greenhouse gas emissions at epic proportions. It is estimated that at least 90 percent of the price of a bottle of water is attributed to the cost of the bottling, packaging, shipping, marketing, transporting and chilling of the final product; all of which, are things other than the water itself. <sup>5</sup>

The plastic required for manufacturing bottles is made from oil, and approximately three ounces of oil are needed to produce one plastic bottle. It is estimated that roughly 28 billion bottles were manufactured in the United States last year, which translates to the consumption of 645 million gallons of oil. <sup>6</sup> With gas prices and the ever-dwindling supply of oil the world has available, 645 million gallons is a staggering amount of oil to be wasted just for society's convenience. It is important to note that 645 million gallons of oil is required for only the production of plastic water bottles, and does not take into account the additional millions of gallons of oil needed to transport, chill, and market the finished water beverage. The Pacific Institute estimated in 2006, that producing the bottles for consumption in just the United States required more than 17 million barrels of oil, excluding the energy for transportation. Approximately 2.5 million tons of carbon dioxide has been introduced into the atmosphere that is associated with bottling water. <sup>7</sup>

A majority of people today are still not fully aware how plastic is made, and what it is derived from. This alone means that educating and communicating with the public on the methods required for plastic production is extremely crucial for any plan that deals with the mitigation strategies of greenhouse gas pollutant and getting the global community actively involved with these issues. Similar to what C.W. Post ought to pursue, education of the student body for which it resides over is very important for the success of our own plan to reduce or ecological footprint on our world today. Education techniques that could be utilized include advertising, holding "green" events, establishment of clubs, promoting student activities, and even offer seminars and lecture classes on the principles for a sustainable society and other outlined issues.

To compare with the world's total consumption, C.W. Post has contributed to the consumption of 65,880 ounces (3 fl. Oz. X 21,960 bottles), or 515 gallons of oil in the last 9 months alone! Broken down to a daily basis, C.W. Post wastes about 3 gallons of oil per day just on plastic water bottles. One can see how a ban on the sale of plastic bottles across campus will have a substantial impact on improving our ecological footprint, and a shift to a more sustainable path.

Environmental sustainability is seen as a vital goal for every nation in today's modern society. More needs to be done in order to reduce our ecological footprint on Earth, and there are several things that need to be addressed in order to fully understand the current situation and take the necessary steps to reduce the impact we have on our environment.

Mitigation techniques of greenhouse gas emissions are already practiced in numerous developed countries, which aim to reduce their own dependence on oil. Reduction of greenhouse gas emissions can be accomplished in many ways, including the elimination of the use of oil in the production of plastic materials – a synthetic that is used in the packaging of materials for convenient use in today's 'modern' society. C.W. Post serves as the last bastion of curbing the human race's contribution to greenhouse gas emissions. Education, participation, and actively engaging the student body are all effective means of communicating the serious issue of current environmental waste. By distributing and teaching the information to the students, it will allow for the future generation of society to have the necessary knowledge and tools to effectively reduce our global ecological footprint. Without planning and controlling our unsustainable habits and exploitive ways of extracting natural resources from the environment, disrupting the natural balance of ecosystems that will affect the future generation of the human population is inevitable. A shift in our global perspectives of each other and realization that we are one people must be observed in order to become a more sustainable society that allows us to share and secure the future of our world.

## **Environmental Implications: Where Plastic Bottles are produced**

Plastic bottles are produced worldwide, but are more concentrated in developed or developing nations where plastic bottle materials and resources can be acquired at a low cost and with relative ease. The rise of global national corporations, or GNCs, has been attributed to the exponential growth of the bottled water industry itself, thus exploiting the natural [and human] resources at an increasing rate and by the most efficient means necessary, at the company's discretion. This practice often leads these corporations to function and operate at a level where they obtain the maximum profits at whatever the environmental or social cost.

Plastic water bottle production in the United States has been associated with a massive amount of fresh water consumption. The process of making plastic bottles requires PET, or polyethylene terephthalate, a common material found in many typical plastic bottles and packaging used for its characteristics of durability and transparency. In order to produce 1 kilogram of PET (or 1 kg of plastic bottles), 17.5 kilograms of water are required. The United States produces an estimated 2.7 million tons of plastic bottles annually, wasting more 47 million tons of water.<sup>8</sup>

In addition, once the consumer has finished their beverage and disposes of their plastic waste, the plastic bottles are discarded in landfills and sometimes even the ocean. It may take thousands of years for the bottles to decompose in landfills and the ocean, where the plastic reacts with sunlight and eventually breaks down to form plastic pellets that are sometimes consumed by animals in their habitat which are eventually killed due to the harmful chemicals that are contained within the pellets.<sup>9</sup>

Without restricting the unsustainable growth of these global corporations, the goals of these companies will always be to increase their wealth by using unsustainable, exploitive techniques

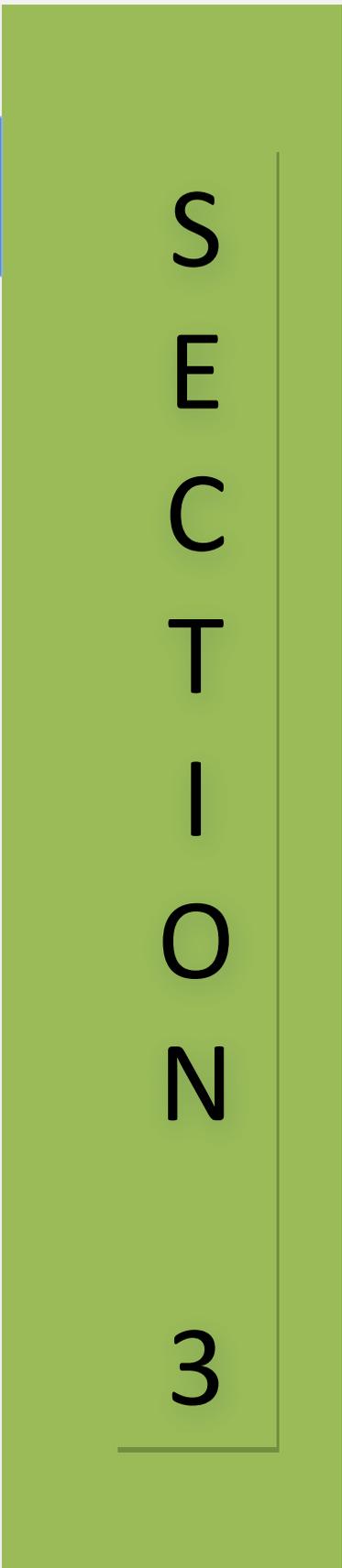
in extracting natural resources from the environment; disrupting the natural balance of ecosystems that will negatively alter the future health of our only world.

### Sources:

1. Read, Learn, and Know About Water. (Copyright 2004). *AllAboutWater.org*  
Retrieved April 15, 2011, from <http://www.allaboutwater.org/environment.html>
2. Plastic Free Ocean. (Copyright 2010, ARYOSYS, Inc). *Plastic Free Ocean, A Campaign for a Plastic Free Ocean*. Retrieved April 15, 2011, from <http://www.plasticgreeocean.org/node/22>
3. Bottled Water and Energy, A Fact Sheet. (Copyright 2008, Pacific Institute). *PacInst.org*. Retrieved April 16, 2011, from [http://www.pacinst.org/topics/water\\_and\\_sustainability/bottled\\_water/bottled\\_water\\_and\\_energy.html](http://www.pacinst.org/topics/water_and_sustainability/bottled_water/bottled_water_and_energy.html)
4. Bottled Water. (Copyright 2008, Pacific Institute). *PacInst.org*. Retrieved April 16, 2011 from [http://www.pacinst.org/topics/water\\_and\\_sustainability/bottled\\_water/index.htm](http://www.pacinst.org/topics/water_and_sustainability/bottled_water/index.htm)
5. Plastic Facts and Statistics. (Copyright 2003-2010). *Container Recycling Institute*. Retrieved April 16, 2011 from <http://www.container-recycling.org/facts/plastic/>
6. Waste and Recycling Facts. (Copyright 2010). *Clean Air Council*. Retrieved April 16, 2011 from <http://www.cleanair.org/Waste/wasteFacts.html>
7. Shawn Carvajal, (April 2011). *Director of Dining Services at C.W. Post*; Aramark.
- 8-9 Documents from the Environmental Protection Agency. (2011). *Safewater.org*  
Retrieved April 16, 2011 from:  
[http://www.safewater.org/PDFS/owp/lesson8\\_links/Bottled%20Water%20Jigsaw%20Information.pdf](http://www.safewater.org/PDFS/owp/lesson8_links/Bottled%20Water%20Jigsaw%20Information.pdf), Safewater.org



What are others doing?  
How we compare to other  
colleges in the United States and  
Canada. What have they done  
already.



S  
E  
C  
T  
I  
O  
N  
3

At C.W. Post, plastic water bottles are a major product that are bought and sold throughout the campus. However, plastic bottles are very harmful for the environment. Plastic requires a lot of energy to be processed and transported that use up a lot of fossil fuels. This problem has led to the banning of the selling of plastic bottles in many schools around the world. Many universities have steered away from plastic and started to use reusable bottles and new water infiltration systems in their schools.

Some universities that have banned plastic use are Bishop University, University of Winnipeg, Brandon University, Queens University, Ryerson University, University of Ottawa, Trent University, University of Portland and Oregon University. Many of these schools are located in Canada besides University of Portland and Oregon University. Bishop University was the first university in Quebec to ban the sale of plastic bottles at their campus. It took the school over a year to petition and raise awareness of the negative impacts of plastic waste towards the environment. Three-quarters of the school took a survey and then voted against plastic bottles. Similarly, at C.W. Post, we have begun our quest to ban plastic bottles by creating a survey to raise awareness of the cost and negative impacts of plastic bottles, and interest in water filtration systems. The survey is online so students can easily access and complete the survey on any electronic device. The survey consists of only five multiple choice questions so the survey should only take students less than two minutes. These questions would give the students an idea about how much money they actually spend a week in water bottles and may be considering purchasing a reusable water bottle.

### **University of Winnipeg**

At the University of Winnipeg, there is approximately 38,400 plastic bottles sold in cafeterias and vending machines in one year at their campus. A large majority of the student body voted to eliminate this number and start to use reusable bottles to create a healthier, sustainable campus. University of Winnipeg President & Vice-Chancellor Lloyd Axworthy states, “We are committed to a comprehensive Sustainability Management System at The University of Winnipeg, unique among Canadian universities, and the initiative shown by our students to reduce needless plastics on campus is consistent with that policy. We are proud to support this student-led initiative” (<http://uwinnipeg.ca>). The students took the initiative to solve a growing problem that harms the environment.

### **Ryerson University**

Ryerson University’s petition at first was unsuccessful, but then became another school that has successfully banned plastic at their campus. After September 1, 2010, the University of Ottawa is another school that has banned the sale of plastic. Pierre De Gagné, assistant director of engineering and sustainable development at the University of Ottawa's infrastructure department states, “the move is intended to encourage students to drink free, healthy tap water and reduce plastic bottle waste” (<http://www.cbc.ca/news>).

## **Oregon University: Take Back the Tap**

Besides Canadian schools, there have been some schools in the United States that have also taken the initiative to ban plastic sales on their campus. One of those schools is Oregon University. Oregon University's campaign is called "Take Back the Tap". This was created by, adopted and promoted by the Climate Justice League. The campaign has drawn attention to the negative impacts of plastic bottles on the environment. This University has provided an alternative to bottled water by perfecting their tap water.

Freshman Manny Garcia, co-coordinator of UO's Take Back the Tap explains:

"Bottled water is not necessary because we already have perfectly good tap water, and it's terrible for the environment...If you were to take, in 2009, all the bottled water, and you stacked them on top of each other, you would go to the moon and back 65 times It's better just to get it out of our economy, and out of our ecosystems (studentfreepress.net).

The campus has voted and the results were twelve-to-one in favor of banning plastic bottles.

## **University of Portland**

The other school that is successful is the University of Portland. After January 26, 2010, students and faculty are being encouraged to drink tap water from reusable containers. The school is determined that this will greatly reduce the amount of waste throughout the campus but it will also shed some light on water rights. In order to properly ban the sale of plastic water bottles in schools, one must provide an alternative to bottled water. If the school bans the sale of water bottles, the students, faculty and staff need some other way to have clean, healthy drinking water. This is where the new water filtration systems come into the equation. Installing new water filtration systems in several buildings in the classroom will promote using reusable bottles. Students can refill their reusable bottles as many times per day as they desire with no cost. After purchasing their reusable bottle, they can refill it at the new, clean refill stations that would be located at any main building in the campus. This is what the schools that successfully banned plastic have done. They addressed the plastic problem, made it relate to the public, created a new solution and put it into effect.

## **BIBLIOGRAPHY**

-Associated Press, January 26<sup>th</sup>, *University of Portland decides to ban plastic bottle sales*, <http://northportland.katu.com/content/university-portland-banning-plastic-bottle-sales>

-Ben Maras, February 16, 2011, *Oregon may join the ranks of schools banning bottled water*, <http://www.studentfreepress.net/archives/6968>

-December.17.2009, *University and College Bottled Water Bans*, <http://skytrax.ca/brandon-university-the-3rd-canadian-university-to-ban-bottled-water/>

-Emily Chung, April 21, 2010, *Bottled water sales banned at Ottawa campus*,  
<http://www.cbc.ca/news/canada/ottawa/story/2010/04/21/university-of-ottawa-bottled-water-ban.html>

-Robyn Urback, March 15th, 2010, *Ryerson goes bottled water free*,  
<http://oncampus.macleans.ca/education/2010/03/15/ryerson-goes-bottled-water-free/>

-The Council of Canadians, Monday, February 7th, 2011, *Barlow Speaks at Queen's University*,  
<http://www.canadians.org/campaignblog/?p=6293>

-Winnipeg Free Press, March 23, 2009, *Water: Not For Sale: UWinnipeg to be first university in Canada to ban plastic water bottles*, <http://www.uwinnipeg.ca/index/release-090323>



S  
E  
C  
T  
I  
O  
N  
4

What are we doing already?  
C.W. Post already have some  
programs already that can be  
built upon.

## **Forward**

Long Island University C.W. Post Campus as a whole has made some great strides in making the campus more sustainable. We have set up a recycling program that has taken off in the past four years. The recycling program recycles plastic and paper but this is not enough even with the recycling program there are still hundreds of water bottles that don't get thrown in to the recycling bin. Then three years ago the campus has instituted reusable mug program where students and buy reusable mugs and get discounts on the refills of fountain drinks. Progressively Post is getting to a point of making people aware of what sustainability means and implementing actions on campus.

The most recent program that post has implemented is the sustainability committee, which is made up of students, faculty, staff and administration, led by Professor Scott Carlin. With this committee each person has a voice to try to make our campus more sustainable and the one thing that everyone agrees on is that people need to be educated first before other actions can be made. The First Annual Sustainable Luncheon did just that made C.W. Post more aware. Kristin Leverone and Alexander Schwartzberg made one of the presentations about how this water bottle project can be done at Post. The steps are already in place.

## **Reusable Mugs**

The schools reusable mugs are located and can be purchased in Hillwood commons cafe. In the past two years these mugs have been on sale and only promoted in the beginning. The mugs can be brought by anyone that goes in to Hillwood cafe; students, faculty, and guest. When these mugs first came to the Hillwood cafe there were Aramark employees handing out cards to anyone seen carrying reusable mugs or reusable water bottles got a card for one free fill. When this promotion was implemented there were more students walking around with reusable water bottles. This idea is one step in to the right direction. This proposal will lead us in the right direction of making our campus more sustainable.

The reason that the reusable mugs are not selling is that they are big, bulky, and does not have a closed secured top. Students like to carry the least amount of things as possible. Having something big and bulky is not something that they want to carry.



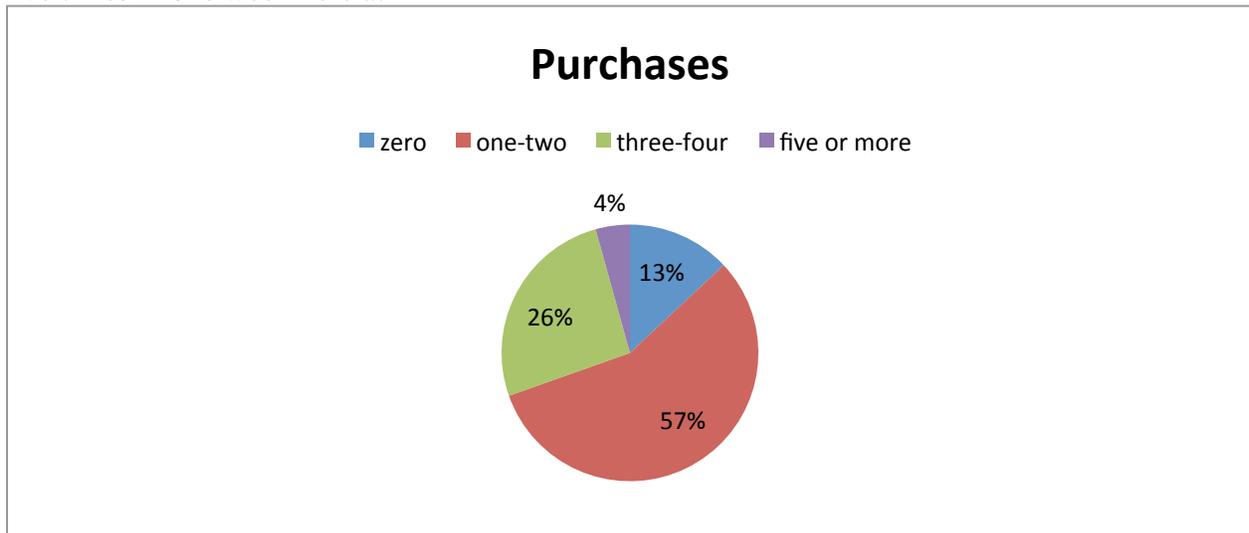
What do students want?  
A survey questions and results  
on what students are looking  
for on campus.

S  
E  
C  
T  
I  
O  
N  
5

## C.W. Post Campus, Long Island University

At C.W. Post, we have started our campaign to successfully ban the sales of plastic. Our survey has been created and data will be offered to give us an idea of what the student body thinks of banning plastic at their campus.<sup>1</sup> If the data concludes that a majority of the students want to ban plastic then we are one step closer to reaching that goal. The C.W. post survey of banning the sale of plastic water bottles was conducted with twenty-four participants. These twenty-four students took the time to complete a survey that was based on the average amount of money spent on water bottles, their views of the quality of drinking water at our campus as well as the interest of new water filtration systems located throughout our campus. These questions will indicate whether or not our initiative to ban the sale of plastic water bottles at C.W. Post will be successful or unsuccessful.

The first question was “How many times a week do you purchase a plastic water bottle at C.W. Post?” 57% of students purchase water once or twice per week. Another 26% of students purchased water three or four times per week. Rarely, students purchased water bottles more than five times in one week here at



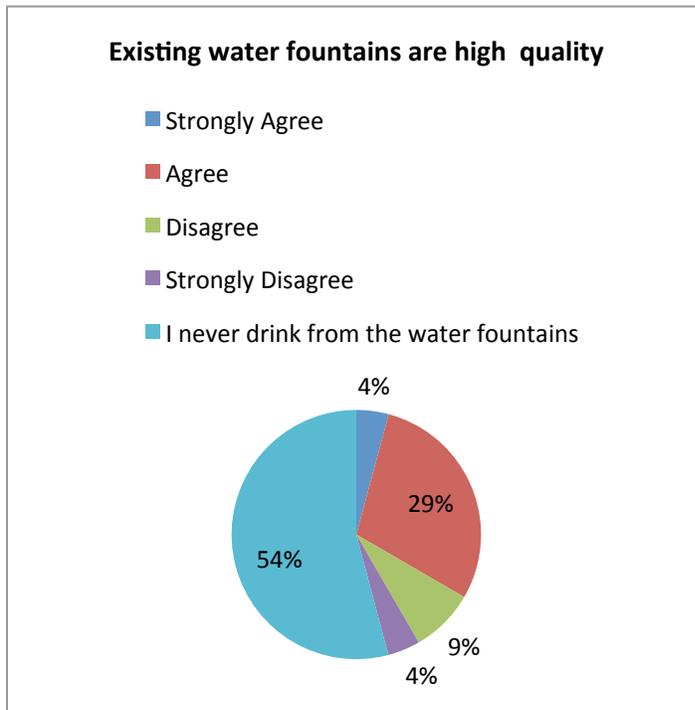
C.W. Post campus. However, the cost of these bottles ranges from about \$1.50-\$2.00 per bottle. One would assume that plastic bottles are probably brought from home and/or students are buying other drinks that are not water but are still purchased in plastic bottles. For example, soda, iced teas, and other soft drinks that are readily available for student and faculty purchase.

The survey's next question indicates how much money per week students spend on plastic water bottles at our campus. This question relates directly to the first. Over 62% of students pay about \$2.00 per week on plastic water bottles and almost 30% of students spend anywhere from \$2.00-\$5.00 per week. That averages to a maximum of \$20 per month and about \$240 per year on plastic water bottles. However, the cost is only the initial problem.

<sup>1</sup> <http://www.surveymonkey.com/s/8PB2WDG>

The main problem is the environmental effect that plastic has on our planet. It takes years for plastic bottles to be broken down into biodegradable compounds if not recycled properly. C.W. Post needs to be effective in recycling its plastic waste by eliminating its sale and resorting to new, more sophisticated ways of an alternate source for plastic bottles. This problem can be solved by installing new, advanced water filtration systems throughout our campus.

Another important question that was addressed in the survey was for students to input their views of the quality of the existing water fountains here on campus. Students indicated that **over half** of the students who took the survey **never drink from the water fountains because they do not like the taste, temperature and overall quality of the water on the campus.**

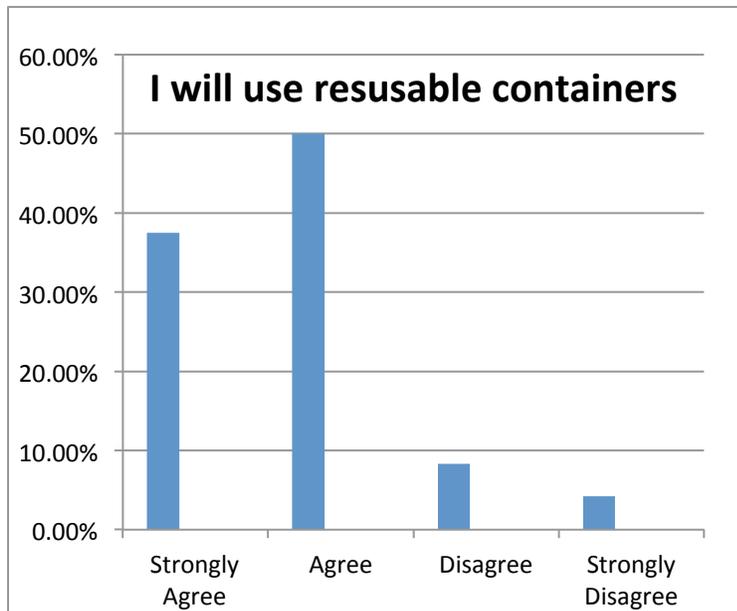


33% of students strongly agree or agree that the drinking water at C.W. Post is of high quality.

A large majority, 67%, disagrees, strongly disagree or never use the existing water fountains on our campus. **This question can be seen as the most important indicator to our proposal.**

The problem can easily be solved by replacing the existing fountains with newer technology to help enhance the overall quality of the drinking water which would promote students to use the fountains more frequently.

There is still another problem that needs to be addressed. If students now have better drinking water, what should they use to carry and transport their water? We have created a solution that can be alternative to the problem. If there were reusable, stainless steel water bottles to fill up over and over, students can use these instead of plastic bottles. Plastic bottles are regularly discarded, but these bottles can be used again. These reusable bottles will have C.W. Post logos and colors on them to create a sense of school pride and be aesthetically pleasing to their eye. These reusable containers can satisfy all members of the C.W. Post community. Commuters can fill them up in the morning and not have to worry about buying bottles or lugging around several water bottles throughout the day. Students in the dorms will not have to waste money buying large packages of water bottles and will not have to waste space storing them in their already crowded and cramped dorm rooms. Athletes can bring them to practice and use the water filtration systems to refill their bottles before, during and after practice because the new fountains will most likely be located at the Pratt Recreation Center. Being that most faculty members are at the campus all day, they can purchase a reusable water container and refill them as many times as they went without the hassle of bringing several bottles to last them throughout the long day.



If C.W. Post installed new water filtration systems, the survey data shows that over 85% of students will use the water filtration systems much more often and over 16% of students will use them somewhat more often. Therefore, over 74% of students will use these new water filtration stations in some way.

Additionally, the survey asks students that if these reusable water containers were sold around our campus with C.W. Post logos that appeal to members of this academic community, would they be interested in purchasing them. Nearly 90% of

students who took the survey concluded that they agree or strongly agree with making this purchase. This is a large percentage that is interested in these reusable water containers.

The survey helped our group collect data and give us an idea of what the student body is interested in, in terms of finding an alternative source for purchasing plastic bottles. A large majority of students indicated that they spend up to \$5.00 per week on plastic water bottles, which does not include other plastic drinks such as soda and many others. Students also concluded that the existing water fountains do not have good quality drinking water which has stopped them from using the fountains. If C.W. Post installed new fountains that helped filter the water more efficiently, made it colder and taste better, that students will be much more likely to use the drinking fountains. To completely achieve the overall goal, the alternative source of water needs to be carried and transported in a way that does not involve disregarding non biodegradable materials such as plastic. To solve this issue, new reusable water containers will be provided to students that incorporate the C.W. Post logos as well as the school colors to carry the better quality and tasting water inside. An astonishing ninety percent of students would be interested in making this purchase.

These percentages all have indicated what the students at C.W. Post are interested in. Students are beginning to understand that finding new ways to help save the environmental quality of our planet is becoming more important each day. Our group's proposal is taking the initiative to incorporate new ideas to help the C.W. Post campus become more sustainable and environmentally friendly. Schools around the world are making the move to banning the sale of plastic on their campuses and hopefully C.W. Post is not far behind. As we progress in this eco-friendly project, we have realized that banning plastic on our campus is not such a farfetched idea and that it can be achieved with more support from the student body and faculty to help reach our goal. As the survey is further circulated throughout the C.W. Post campus, one can assume that students as well as faculty will lean toward the more sustainable solution of banning plastic at C.W. Post and eventually to the surrounding schools in the area. The schools that were researched all began with student initiative by addressing the problem. Then these students

gained support from the members of their campus community and with the right data and promotional tactics, they achieved their goal within approximately one academic year. C.W. Post has taken this initial step and will be one step closer in banning the sale of plastic at this campus.

### **Online Survey**

**1. How many times a week do you purchase a plastic water bottle at C.W. Post?**

- None (0)
- a) 1-2
- b) 3-4
- c) 5-6
- d) 6 or more

**2. How much money do you spend per week on plastic bottles at C.W. Post?**

- a) \$0-\$2.00
- b) \$2.00-\$5.00
- c) \$5.00-\$8.00
- d) \$8.00 or more

**3. I like the taste, temperature, and overall quality of the water fountains at C.W. Post?**

- a) Strongly Agree
- b) Agree
- c) Disagree
- d) Strongly Disagree
- e) I never drink from the water fountains.

**4. If C.W. Post installed water fountains with modern filters to improve water quality and taste:**

- a) I would use those water fountains much more often.
- b) I would use those water fountains somewhat more often.
- c) I would use those water fountains about the same as I do now.
- d) I would never use those water fountains.

**5. Would you be interested in purchasing reusable water bottles with a C.W. Post Logo if it were sold around the campus?**

- a) Strongly Agree
- b) Agree
- c) Disagree
- d) Strongly Disagree

**6. Since bottled water is wasteful, should C.W. Post ban their sale?**

- a) Yes, ban the sale of bottled water throughout campus.
- b) Yes, but try this first in one or two buildings.
- c) No. Let people buy bottled water if they want.
- d) I don't know.



What's Wrong with Water  
Bottles?

They are an environmental mess!

Creating a New  
Water Bottle Design!

Students like style and here is a  
water bottle design made for our  
students.

S  
E  
C  
T  
I  
O  
N  
  
6

# Forward

At C.W. Post Campus there are thousands of students, all of which use plastic bottles for their water. The bottles are distributed by Aramark, and even brought from the students' own homes. Some students may use more than one water bottle a day and these bottles are not recycled. This is an unsustainable way of life on campus.

Our goal is to lower the amount of plastic bottles that are being used on campus and then promote the use of reusable aluminum water bottles. Along with this, we would also promote the use of new filtered water fountains that would be used to refill the bottles. Eventually we would like to have plastic bottles banned on campus. But first, student and faculty need information and reasons of why they should opt for the use of a reusable water bottle instead of a plastic water bottle. This information could be distributed on campus; mainly around Hillwood because all of the students pass through that building. This would increase the opportunity for students to learn about why they should be using reusable bottles instead of plastic bottles. Once this has happened, many will be willing to buy the reusable bottles. C.W. Post would make money off of selling the bottles as well as becoming more sustainable.

## **Most Popular Bottled Water Brands: is this water really healthy for you?**

In an article entitled "Best and Worst Bottle Brands," by Lori Bongiorno, in the *Tennessee Tribune*, it explains that many consumers do not really know what they are ingesting when they drink from a plastic bottle. Bongiorno states that "according to a new report released... from Environmental Working Group (EWG). 'Bottled water companies try hard to hide information you might find troubling,' says Jane Houlihan, senior vice president of research for the Washington D.C. -based research and advocacy group.'" The EWG studied the labels of 173 water bottles to see what information was being given to consumers (Bongiorno). The websites of the companies were also looked at to see what information is given to the public, as well as where the water comes from, how it is treated, and even how affective the treatment is (Bongiorno). It is the law that people must know what is in a product they are buying, how much of it, where it comes from, and how it is made. The public has to make educated decisions when it comes to their health. "Tap water is regularly tested and consumers can find their local water info online. That's not necessarily the case with bottled water, which is not required to disclose that information to consumers (Bongiorno)". So, already it can be seen that the tap water from the fountains at C.W. Post is a better resource of water for students than bottled water because that water is tested, as well as cheaper. For the EWG's study, it was found that "more than half of the bottles" that were tested failed, and this was either to show where the water in the bottles came from or show information on "purity" and "treatment" (Bongiorno). The article shows a list of the top 10 selling water bottle brands and how they ranked. Many of these are the very brands whose logos can be seen all around campus, as students carry their water bottles everywhere. Lori Bongiorno states that

*filtered tap water received the best grade (an A) from EWG because if you change your filter regularly, EWG says it is purer than bottled water, plus it saves money (bottled water can cost up to 1,900 times more than what flows from your tap). Drinking tap water also takes less of a toll on the planet. EWG offers plenty of tips for filtering your tap water so that you can drink the healthiest water possible.*

The following chart is based on the findings of the EWG after their study on water bottles and can be found in Lori Bongiorno’s article.

### **Chart A:**

Nestle-Pure Life Purified Water	EWG Grade B
Nestle- Arrowhead Mountain Spring Water	EWG Grade C
Pepsi- Aquafina Purified Drinking Water	EWG Grade D
Coca-Cola – Dasani Purified Drinking Water	EWG Grade D
Nestle-Deer Park Natural Spring Water	EWG Grade D
Nestle- Ice Mountain Natural Spring Water	EWG Grade D
Nestle- Ozarka Natural Spring Water	EWG Grade D
Nestle- Poland Spring Natural Spring Water	EWG Grade D
Nestle - Zephyrhills Natural Spring Water	EWG Grade D
CG Roxane - Crystal Geyser Natural Alpine Spring Water	EWG Grade F

### **Problems with Plastic Water Bottles**

This is not the only article that suggests water bottles are a crucial topic of discussion, and also agrees with the EWG’s findings mentioned. In “Earth Talk: Water Bottle Problem,” by Roddy Scheer and Dough Moss, of the Michigan Citizen, the authors express that today, water had become a beverage, like soda, and this should not be the case. The article states that global water bottle consumption has risen since 1990 and Americans now “consume over 30 billion liters of water out of some 50 billion (mostly plastic) bottles every year” (Moss). Scheer and Moss express that they believe that it is a “ridiculous waste,” for people to be buying into plastic

water bottles when water flows freely everywhere. Many would agree. They also show that according to the Natural Resources Defense Council (NRDC) reports, “that 90 percent or more of the money consumers shell out for it pays for everything but the water itself” (Moss). And this includes only: bottling, packaging, shipping, marketing, other expenses - and, of course, profits (Moss). They also mention the EWG report, the same one that Bongiorno addressed, and quotes the EWG as reporting that,

among the ten best-selling brands, nine - Pepsi's Aquafina, Coca-Cola's Dasani, Crystal Geyser and six of seven Nestlé brands - don't answer at least one of those questions,...only Nestlé's Pure Life Purified Water discloses its specific geographic water source and treatment method ... and offers an 800-number, Web site or mailing address where consumers can request a water quality test report (Moss).

## **Why Should we have Filtered Water on Campus**

Moss and Scheer also look towards the Earth Policy Institute for information, and according to the EPI, “2.7 million tons of petroleum derived plastic are used to bottle water around the world every year... ‘Making bottles to meet Americans' demand for bottled water requires more than 1.5 million barrels of oil annually, enough to fuel some 100,000 U.S. cars for a year.’” So not only is this an issue of people’s health, it is also an issue of recycling, wasteful uses of the earth’s resources, and economics. This way of life is completely unsustainable. C.W. Post is like a small city because it caters to thousands of people every day. It is a place where people live, work, learn, and spend their leisurely time; which is a recipe for sustainable design because it is of mixed use (class notes). But, are we taking care of the environment that is C.W. Post? There is not a sustainable waste management system on campus. Most students do not dispose of their plastic bottles into recycling bins because they are not located in an effective place and also because there just are not enough of them. These plastics go into the trash along with everything else students throw away and this affects everyone on the planet, not just C.W. Post. “The Container Recycling Institute reports that 86 percent of plastic water bottles in the U.S. end up as garbage or litter” (Moss). Most of the water bottles on campus, which appear on the “Best and Worst Water Bottles” chart, are ending up as garbage, considering there is not sufficient recycling on campus for the amount of incoming water bottles. This would be a very hard to accomplish on campus, and an easier way to make campus more sustainable would be to lower the amount of incoming plastic water bottles by having reusable water bottles that can be filled up at filtered water fountains around campus. It will be sustainable, greener, healthier and cheaper in the long run for both students and faculty.

## **An Affordable Water Purification System**

One company called Waterlogic <sup>TM</sup> is currently the world’s leading brand of drinking water dispensers in 2011, according to “Simple, Affordable Drinking Water Purification with Waterlogic Firewall(TM)” by Chris Garner. This year the company is currently promoting a new

UV purification technology which is “cost effective and simple” as it “purifies the water as it dispenses” (Garner). According to Jeremy Ben-David, Chief Executive Officer for Waterlogic, “The carbon filters in Waterlogic systems remove chlorine and other impurities, then the Firewall(TM) UV purifies the water at the moment it is dispensed, and for a few cents a litre our coolers provide an endless stream of cold, ambient, hot or even sparkling water” (Garner). The article shows that the American Journal of Public Health has stated that “30 per cent of all gastrointestinal illnesses are waterborne and preventable” (Garner). This is a scary thought, and probably is a statistic that most of the public does not know. Also, the Water Quality Association has tested and certified Waterlogic machines with Firewall(TM) technology to have achieved a “NSF (National Sanitization Foundation) 55 class A standard for Ultraviolet Microbiological Water Treatment Systems and the rigorous NSF Protocol P231 for Microbiological Water Purifiers” (Garner). This company would be one option for C.W. Post if it were to plan on getting filtered water dispensers for the campus and it may be the best option. This is because “a wide variety of Waterlogic water dispensers are available and they are generally taken on rental contracts (including regular servicing and maintenance) costing c.\$45-\$100 a month,” (Garner) which is very cheap, sustainable and healthy for everyone. Students and faculty should be aware that there is technology like this in the world, and why it should be used. This technology would be perfect in coherence with having reusable water bottles on campus.

## **Why Reusable Water Bottles are Best**

So, why get reusable water bottles? This can be answered by Watergeeks Laboratories™. In an article entitled, “The Watergeeks Laboratories: New BPA-Free Stainless Steel Filtered Bottle to Tackle Today's Top Drinking Water Concerns,” it says, “Americans named "Drinking Water Contamination" as their number one environmental concern in recent (2008) Gallop Polls.” This is a very high statistic. Also, the EWG in a July 2009 report, “documents the leading health concerns associated with public water supply treatments (Chlorine, Chloramine, Fluoride) and the leaching of lead that has resulted in "shockingly high" contaminant levels found in children” (Watergeeks). This should be reason enough to start drinking filtered water. The Watergeeks™ have made "tap filters" which are designed to be used in BPA-Free stainless steel bottles and “to effectively filter chlorine, lead and heavy metals, tastes, odors and other potential contaminants from "tap water" (Watergeeks). So, these bottles filter the water as it is poured into the bottle, which is another great option which offers contaminant free water at a cheaper price over time. According to the article, “each filter yields about 600 servings (16 ounce) of water before requiring replacement and retail under \$10.00 each” (Watergeeks). This is for stainless steel reusable water bottles which are “corrosion, rust and stain resistant and therefore does not require a liner that may potentially leach, break down or even develop mold if not properly cared for” (WaterGeeks) Stainless steel bottles are also “dishwasher safe, do not retain or impart flavors and keep beverages cooler longer than aluminum bottles” which are also an option as a reusable bottle (WaterGeeks). However the article reveals that:

aluminum requires more energy to produce, utilizes less recycled materials in its production and emits much higher Green House Gases (GHGs) in the

manufacturing process. In fact, in addition to carbons and SO<sub>2</sub>'s (primary precursor of acid rain), aluminum smelting is a leading source of PFC (at least 6,000 times more potent than CO<sub>2</sub>s and last 10,000 years) emissions in America today. Watergeeks(TM) stainless steel bottles are made with 60-70% recycled materials and are 100% recyclable (Watergeeks).

So, this gives a plethora of information about stainless steel reusable bottles, aluminum reusable bottles, and even offers another cheap option for how to reduce plastic water bottles on campus.

## **What Younger Students Have Done to Make a Difference**

Younger students have been trying to make a difference as well as these companies. A science club at Galtier Math, Science, and Technology Elementary Magnet School in St. Paul, Minnesota looked into their water quality and how it was affected by the soil. The point of their project was to “increase student awareness of the impact of human activities on the environment” (Olivia LeDee). In the article, “A Science Club Takes Action,” students learned that contaminants in the soil can affect health and found that they wanted to do something about it and make a difference in the community. “Students tested their tap water and soil...As a result, both students and their parents changed behaviors (Olivia LeDee)”. This project truly proved that there is “power of integrating science with real-world issues,” and how “guiding children to make more informed decisions about their world,” is a benefit for everyone (Olivia LeDee). This is what we should accomplish for C.W. Post. It only takes a small amount of people to start something big and make a difference.

In this example, fourth through sixth-grade students met during the after-school science club session, from March through May and worked with “three graduate fellows in environmental science fields at the University of Minnesota as part of a National Science Foundation GK-12 grant to promote science education in inner-city schools” (Olivia LeDee). The students tested the water samples for contaminants and the soil samples for lead; and also, the water kit tested for ammonia, chlorine, chromium, copper, cyanide, iron, nitrate, phosphate, silica, and sulfide. According to LeDee, the presence of a compound is not necessarily bad, but the amount of the substance can cause problems. “Silica, phosphate, nitrate, chlorine, and ammonia were present in 40% or more of the samples tested” (Olivia LeDee). Many of these have little impact on human health but are common indicators of pollution in ponds and streams. “Of more concern was that 67% of the home soil samples were potentially contaminated with lead” (LeDee). Students then showed their parents what they found in their tap water and soil. The result of this was that “many parents purchased commercial water filters for drinking water (available for less than \$30)” which can “remove 98% of lead and, to a lesser extent, copper, chlorine, and mercury,” (LeDee ). “Even though our water test did not test for lead, the presence of lead in the soil and other contaminants in the water suggests that water filters are likely to have health benefits for these families” (LeDee). So, even if C.W. Post had its water tested and some contaminants were found, it would be extremely beneficial to everyone on campus to install filters. And once these filters are installed students would be able to use reusable water

bottles all the time instead of buying plastic water bottles from the various vendors on campus supported my Aramark.

## **Conclusion: How C.W. Post can unite Under One Logo to Promote Filtered Water and Sustainability on Campus**

Aramark would probably even support the students in getting reusable water bottle on campus. They have in the past. In the University of Tennessee, the Student Government Association and ARAMARK along with other groups wanted to provide students at the university with reusable water bottles.

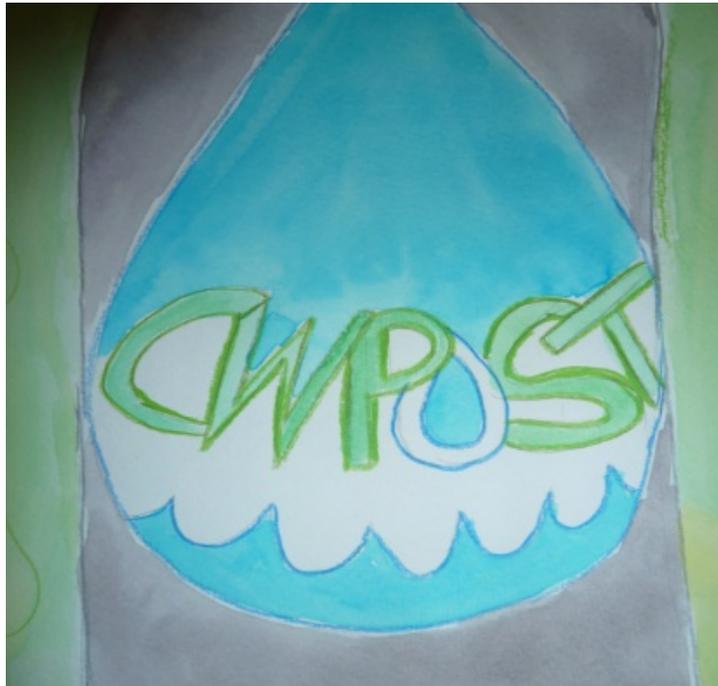
Ten thousand reusable aluminum water bottles will be distributed to students with a UT student ID, on a first come first served basis, on the UC Plaza during a live remote with WUTK 90.3 "The Rock"... The funds used to purchase the aluminum bottles were generated from the sale of the "All Your Might" shirts as part of the Power Tee Program...The profits derived from the sale of these shirts are used to fund student-driven, campus initiatives (States News).

If this can be done on one campus, it can certainly be done at another.



This campus should be C.W. Post and this is especially because Aramark provides food and beverages for the school. Ten thousand bottles would go a long way on campus, and would deter many students from using plastic water bottles. Just like the students in UT, students at C.W. Post can join together in a group to promote this and they should united under one logo that represents the school and the cause. They will also be provided will all of the information found about the most popular plastic water bottle brands, and alternatives to buying those. It could be done as an event on campus. The logo that the event should promote is a picture of a faucet with one large drop of water coming out of it, with C.W. Post inside the water droplet. It would be a symbol of sustainability, environmental awareness, and health for the campus. Much like in UT,

this logo can be put on t shirts and water bottles for students and faculty to buy to help promote the use the reusable bottles and get many other groups involved in a great cause of banning plastic water bottles to make C.W. Post more sustainable.



## Sources

Bongiorno, L.. "Best and worst bottled water brands." *The Tennessee Tribune* 13 Jan. 2011, Ethnic NewsWatch (ENW), ProQuest. Web. Apr. 2011.  
<http://proquest.umi.com.cwplib.proxy.liu.edu/pqdlink?Ver=1&Exp=04-13-2016&FMT=7&DID=2270667051&RQT=309>

Calgary, Alberta. The Watergeeks Laboratories: New BPA-Free Stainless Steel Filtered Bottle to Tackle Today's Top Drinking Water Concerns. COPYRIGHT 2009 News provided by Comtex.[http://infotrac.galegroup.com.cwplib.proxy.liu.edu/itw/infomark/0/1/1/purl=rc1\\_BIM\\_0\\_A207441369?sw\\_aep=nysl\\_li\\_liu](http://infotrac.galegroup.com.cwplib.proxy.liu.edu/itw/infomark/0/1/1/purl=rc1_BIM_0_A207441369?sw_aep=nysl_li_liu)

Carlin, Scott. Class Notes, 2011 C.W. Post Campus

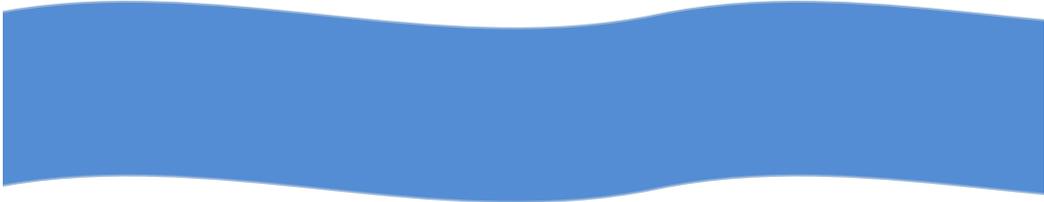
Garner, Chris. "Simple, Affordable Drinking Water Purification with Waterlogic Firewall(TM)." *Business Wire* 5 April 2011 ABI/INFORM Dateline, ProQuest. Web. Apr. 2011. <http://proquest.umi.com.cwplib.proxy.liu.edu/pqdlink?Ver=1&Exp=04-13-2016&FMT=7&DID=2311047791&RQT=309>

La Rosa, Nicole. C.W.Post Logo and Pictures, 2011

LeDee, Olivia, Anna Mosser, Tony Gamble, Greg Childs, and Karen Oberhauser. "A Science Club Takes ACTION." *Science and Children* 44.9 (2007): 35-37. Research Library, ProQuest. Web. Apr. 2011.  
<http://uu2mk8se5u.search.serialssolutions.com.cwplib.proxy.liu.edu/?sid=CentralSearch:WED&genre=article&atitle=A+Science+Club+Takes+Action&volume=44&issue=9&title=Science+and+Children&issn=0036-8148&date=2007&spage=35&aulast=LeDee&aufirst=Olivia>

Scheer, R., and D. Moss. "Earth Talk: Water Bottle Problem." *Michigan Citizen* 6 Mar. 2011, Ethnic NewsWatch (ENW), ProQuest. Web. Apr. 2011.  
<http://proquest.umi.com.cwplib.proxy.liu.edu/pqdlink?Ver=1&Exp=04-13-2016&FMT=7&DID=2303624561&RQT=309>

States News Service, "ARAMARK, CAMPUS GROUPS GIVE REUSABLE ALUMINUM WATER BOTTLES TO UT STUDENTS." (August 30, 2010): NA. Academic OneFile. Gale. Long Island University Libraries. Apr. 2011  
[http://find.galegroup.com/gtx/start.do?prodId=AONE&userGroupName=nysl\\_li\\_liu](http://find.galegroup.com/gtx/start.do?prodId=AONE&userGroupName=nysl_li_liu)



Plastics and Ecology!

S  
E  
C  
T  
I  
O  
N  
  
7

In the United States, people dispose of millions of tons of plastic bottles every year. Most of the plastic bottles end up in landfills throughout the country and only a few are recycled. Some of the plastic bottle wastes even end up in places where they cause a great amount of harm to the environment. Companies that produce and sell plastic bottles are never concerned about where they might end up or what damages they will do to the ecosystem of the planet. Their only concerns are maximizing profits from the sale of products that contains a harmful toxin known as BPA (Bisphenol A). Plastic bottles are bad for the environment and should be ban from our campus because they contribute to the growth of the Great Pacific Garbage Patch, contain the harmful toxin Bisphenol A, cause the deaths of millions of marine animals, and plastic bottles do not biodegrade and can take hundreds of years to breakdown into simpler compounds.

### Great Pacific Garbage Patch

The Great Pacific Garbage Patch is located in the North Pacific Subtropical Gyre, a slowly moving, clockwise spiral of currents created by a high-pressure system of air currents. The area is an oceanic desert, filled with tiny phytoplankton but few big fish or mammals (Silverman, 2007). The Great Pacific Garbage Patch is filled with trash from all around the world. The patch is mostly plastic waste such as plastic bottles and plastic bags. Many scientists estimate the size of the patch to be larger than the state of Texas (Silverman, 2007). Most of the trash in the ocean today is 90% plastic waste and every square mile of ocean contains 46,000 pieces of plastic waste.

The plastic waste in the ocean usually end up on beaches around the globe, where they pollute the sand and discourage swimmers from entering the water. Most of the plastic waste in the ocean originate on land from poor waste management. Nearly all experts who speak about the subject raise the same point: It comes down to managing waste on land, where most of the trash originates. They recommend lobbying companies to find alternatives to plastic, especially environmentally safe, reusable packaging. Recycling programs should be expanded to accommodate more types of plastic, and the public must be educated about their value (Silverman, 2007).

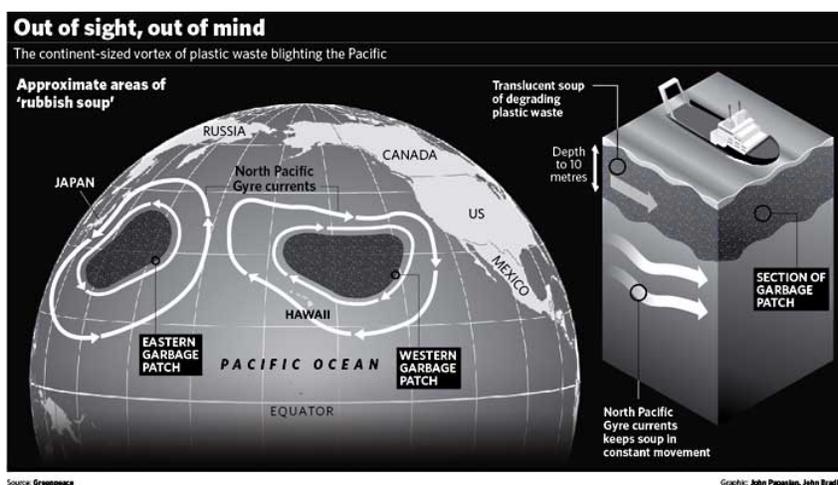


Figure 1: Eastern and Western Garbage Patch (Silverman)

### BPA

BPA (Bisphenol A) is a toxic organic compound used to create plastic bottles. Many scientists have linked BPA to hormone-sensitive cancers like breast cancer and prostate cancer (Adams, 2010). BPA is a threat to living organisms who come in contact with plastic waste. BPA is an endocrine disruptor, which can mimic the body's hormones and lead to negative health effects. Early development appears to be the period of greatest sensitivity to its effects. Regulatory bodies have determined safety levels for humans, but those safety levels are currently being questioned or under review as a result of new scientific studies (Wikipedia). The European Union has already banned BPA from being used to make plastic bottles and soon the United States will do the same.

### **Wildlife**

Every year millions of marine and land animals are harmed by the waste created from plastic bottles and other plastic materials. Animals that come in contact with plastic waste usually get sick or die from the material or the toxins used to make the plastic, "Plastic has acutely affected albatrosses, which roam a wide swath of the northern Pacific Ocean. Albatrosses frequently grab food wherever they can find it, which leads to many of the birds ingesting -- and dying from -- plastic and other trash. On Midway Island, which comes into contact with parts of the Eastern Garbage Patch, albatrosses give birth to 500,000 chicks every year. Two hundred thousand of them die, many of them by consuming plastic fed to them by their parents, who confuse it for food. In total, more than a million birds and marine animals die each year from consuming or becoming caught in plastic and other debris (Silverman, 2007).

Like the albatross, other animals that have been exposed to the plastic waste in the landfills and oceans have also suffered a great amount. The area within the Great Pacific Garbage Patch is a dead zone containing almost no marine life other than some phytoplankton and small fishes. Marine animals feed on the plastic waste and that is why many chemicals have been found in most of the fishes humans eat.

### **Plastics Do Not Biodegrade**

Another reason why plastic bottles are bad for the environment is because they are not biodegradable. Plastic does not decompose and the waste that is broken down remains on the planet for thousands of years, "The main problem with plastic -- besides there being so much of it -- is that it doesn't biodegrade. No natural process can break it down. (Experts point out that the durability that makes plastic so useful to humans also makes it quite harmful to nature.) Instead, plastic photodegrades over a long period of time. A plastic cigarette lighter cast out to sea will fragment into smaller and smaller pieces of plastic without breaking into simpler compounds, which scientists estimate could take hundreds of years. The small bits of plastic produced by photodegradation are called mermaid tears or nurdles" (Silverman, 2007).

Since plastic does not biodegrade, whatever remains from the breakdown of the plastic waste ends up in drinking water, soil, animals, and the ocean, "When plastics break down, they don't biodegrade, they photodegrade. This means the materials break down to smaller fragments. These readily absorb toxins which contaminate soil, waterways, and animals upon digestion (Reuseit.com). This is very harmful to the environment and could take years to clean up and fix before it causes more damage on the ecosystem.

## **Recommendations & Conclusions**

In conclusion, plastic water bottles should be banned from C.W. Post because of the alarming facts they have on the environment in which we live. Other options and alternatives can be made to replace plastic water bottles on campus such as the sale of stainless steel bottles and the installation of water filtration systems near water fountains. If C.W. Post wants to become a more sustainable campus, these changes must occur within the next couple of years.

## **Bibliography**

Adams, Mike. "Stainless steel water bottles: Are they better than plastic and glass?" 16 September 2010. NaturalNews.com. 6 April 2011 <[www.naturalnews.com/029758\\_stainless\\_steel\\_water\\_bottles.html](http://www.naturalnews.com/029758_stainless_steel_water_bottles.html)>.  
Reuseit.com. 2011. 20 April 2011 <[reuseit.com](http://reuseit.com)>.  
Silverman, J. "Why is the world's biggest landfill in the Pacific Ocean?" 19 September 2007. HowStuffWorks.com. 6 April 2011 <[science.howstuffworks.com/environmental/earth/oceanography/great-pacific-garbage-patch.htm](http://science.howstuffworks.com/environmental/earth/oceanography/great-pacific-garbage-patch.htm)>.  
Wikipedia. 20 April 2011. 19 April 2011 <[wikipedia.org](http://wikipedia.org)>.



Let's Fundraise!

S  
E  
C  
T  
I  
O  
N  
  
8

## **Introduction**

In today's world of climate change and economic turbulence consuming fewer resources and minimizing waste is becoming an increasingly important objective for countries, cities and college campuses. The model of the sustainable city follows the principal goals of contemporary American urban planning through the calculated implementation of green buildings and infrastructure designed to meet the needs of a changing population. Green building, also known as sustainable or high-performance building, is defined by the site, design, construction, operation, maintenance, renovation and deconstruction of infrastructure built to satisfy the requirements of its respective purpose (1). One of the key challenges associated with the construction of green infrastructure is the procurement of funds to enable these projects to see fruition. The waste management goals of the sustainable city are to minimize energy, water, material and natural resource consumption as well as curtail the water, air and waste pollution produced by the city (1). The principles of the sustainable city correspond directly with the goals of the C.W. Post Water Bottle Project – to reduce the consumption of materials and minimize waste and pollution.

In 2006, production of single-use bottles accounted for 17 million barrels of imported crude oil (2). Because oil is directly tied to the production and transportation of bottle water, the price is only going to increase with steadily rising oil prices. Furthermore, the manufacturing processes involved in producing a plastic bottle requires three to five times more water than the bottle contains (2) and it's estimated that only 12% of plastic water bottles are recycled (9). C.W. Post campus has consumed over 22,000 plastic water bottles in the past 9 months.<sup>2</sup> This has cost the students and faculty over \$37,000 to purchase this many bottles.<sup>3</sup> All of these factors fail to cooperate with principals of sustainability. It's imperative that we take steps now to minimize the campus-wide consumption of non-renewable materials and the pollution associated with these materials.

The C.W. Post Water Bottle Project (working title) is a student-led initiative to discourage and reduce the on-campus sales of single-use plastic water bottles. This initiative follows in the steps of several domestic and foreign college and university campuses that have banned the sale of single-use plastic water bottles (3). This goal will be achieved by installing a series of water fountains designed to accommodate reusable water bottles and generating student awareness about the health, economic and environmental problems associated with single-use plastic bottles. Aside from getting administrative approval, the crucial obstacle facing this initiative is the required fundraising to purchase and install new water fountains across campus so the new system is effective and convenient.

## **Fundraising**

Communities and schools that wish to pursue a greener future may apply for financial grants from state and federal agencies. Federal funding is usually restricted to larger, statewide sustainability efforts, many of which allocate money to smaller initiatives. (12) This year, the

---

<sup>2</sup> Statistic acquired from Billy Karavasilis

<sup>3</sup> 22,000 \* \$1.70 (per bottle) = \$37,400

Massachusetts School Building Authority has allocated \$25.3 million to fund 43 projects across the state as part of the Green Repair Program. The Green Repair Program gives money to schools to repair or replace roofs, windows, boilers and other necessary facilities in Massachusetts's schools to increase energy efficiency and generate cost savings. (15) Because this funding is awarded on a competitive basis, schools must complete a thorough application before being considered for its benefits.

In New York, the State Department of Environmental Conservation provides tax credits to owners and tenants of buildings that increase energy efficiency and reduce environmental impacts as part of the Green Building Tax Credit program. (16) In 2008, the Green Innovation Grant Program awarded SUNY Purchase \$2.1 million to fund the construction of a 24,000 square foot green roof for one of the campus's buildings. "The Green Innovation Grant Program promotes sustainable, environmentally sensitive water infrastructure and technologies." (16)

C.W. Post could be eligible for state grants awarded to schools that place emphasis on sustainability. Receiving state grants for a sustainable initiative begins with the application process. "It's a very simple process: you have to master what your subject matter is and then just that right back to them," says Isaac Kremmer, director of the Oyster Bay Mainstreet Association. (12) During his tenure, Mr. Kremmer has secured nearly \$500,000 of grants and funding and completed several major building renovation projects. (17) "It's an exercise in keeping things simple and giving no more than what's needed. Brevity can be a good tool for a grant writer."

Grassroots fundraising can be an effective method of fundraising on a small scale if it garners enough community support. Grassroots fundraising is a method of securing funds by collecting money from a small group or community of dedicated supporters. The challenge or grassroots fundraising lies in generating community support and sustaining funds. C.W. Post could generate funds with a sustainability-themed promotional event for the Water Bottle Project. Some schools have found success with fundraisers focused on selling sustainably produced goods such as reusable shopping bags and water bottles, eco-friendly cleaning supplies and certified Fair-Trade foods. Collecting e-waste, like printer cartridges, old cell phones and old computers is also a profitable and environmentally friendly way to raise funds on a small scale. (5)

Thanks to advances in telecommunications and social networking, grassroots fundraising has taken on a new dimension. Promoting a project on the Internet is an effective way to spread awareness and fundraise sustainable initiatives. A new type of fundraising – dubbed 'crowd-funding' has recently taken off due the success of websites like Pledgemusic.com and Kickstarter.com. Crowd-funding sources funds for an initiative through social networking sites like Facebook and Twitter, and even videogames like Second Life. (10) A group of individuals from Detroit recently used Kickstarter.com to raise money for an 'urban renewal' project directed towards erecting a statue of Robocop from the *Robocop* movie franchise. (6) While this particular project isn't necessarily a sustainably themed project, it shows that crowd-funding an urban renewal project



is feasible if it is promoted well.

Despite the success of some of these fundraising projects, engaging a campus community in a productive manner is not always a simple task. “Even if occupants are informed about green campus considerations, social science research shows that people make conscious decisions only about 5% of the time. As a result, even when occupants know about and understand the importance of something like energy conservation practices, information alone is not always enough to influence improvements, and it is likely that they are not consistently applying awareness to behavior.” (18) A Parent-Teacher Organization sponsored fundraiser in Rockville, Maryland was met with a lukewarm student response after it was discovered that products being sold contained no recycled content. Concerned students established a boycott of the fundraiser, causing a steep reduction in the amount of money collected. (5) Due to potential shortcomings of grassroots fundraising, many schools have sought out a more commercial alternative.

Fundraising during a recession comes with its own challenges; people are instinctively less inclined to give money to a project that offers little or no immediate return. This combined with across-the-board cuts in education spending have fostered the presence of corporate sponsorship in American schools. Corporate sponsorship has helped fund projects that fit with the brand and objectives of the sponsor. “It’s the best marketing platform available,” says Dean Bonham, CEO of the Bonham Group, a sports marketing company that negotiates naming rights. “It costs them (the school district) nothing to create this revenue.” (4) While lucrative sponsorship opportunities are promising for school districts, this practice has been met with both applause and controversy. “It’s a very dangerous thing for a corporation to have this kind of presence in school,” said advertising critic Jean Kilbourne. (13) Ms. Kilbourne argues that children are more susceptible to in-school advertising because they are conditioned to believe what they learn and see in school is reliable and truthful.

“It is an important part of the whole fundraising picture,” says Isacc Kremmer. “I think culturally we’re moving towards integration of corporations and businesses into every facet and every aspect of our life. One has to be aware of those opportunities and possibilities as they come along. “ A Los Angeles County school football field may be funded completely by Nike in exchange for naming rights for the field, a result of a recent overturn of an on-campus advertising ban. This experiment in on-campus advertising is expected to raise \$18 million a year for the struggling school district. Despite the uneasiness brought on by permanently branding academic institutions with corporate signage, the bleak economic atmosphere offers few other options for such high-cost projects, many of which are necessary improvements. “This is really our way to be responsive to that reality (budget cuts),” said Melissa Infusino, the director of partnerships for the Los Angeles school district. “As uncomfortable as it may be for folks, it’s less comfortable to get rid of programs or go through more layoffs. We’re not naïve; it’s not going to take away all of our budget issues.” (13) The C.W. Post Water Bottle Project could be the beneficiary of corporate giving if the initiative is in congruence with the sponsor’s principles. Such an arrangement could be mutually beneficial for both the students and the sponsor.

Aramark, the foodservice provider at C.W. Post campus, places a strong emphasis on corporate social responsibility. “Corporate social responsibility is a company’s sense of responsibility towards the community and environment (both ecological and social) in which it operates. Companies express this citizenship through their waste and pollution reduction

processes and by contributing to educational and social programs.” (21) In 2009, Aramark was selected as a finalist for the U.S. Chamber of Commerce Corporate Citizenship Award for their community involvement program. The Aramark Building Community volunteers refurbish community centers and educate families about good nutrition through health and wellness events. (19) I made several unsuccessful attempts to contact a representative from Aramark to discuss the possibility of a corporate sponsorship for C.W. Post Campus.

### **Timeline for C.W. Post**

If adequate funding is secured the C.W. Post Water Bottle Project could see some early implementation by next fall or spring. Enough funding would need to be secured to pay for at least two water fountains. The fountain that is best suited for C.W. Post would be the Elkay EZ-H2O. At a cost of about \$1000, this fountain features a spout to refill a bottle with chilled, filtered water as well as a traditional water fountain mouthpiece. The fountain also features a small screen that displays how many 12oz bottles the water fountain has saved over the course of its lifetime. (7) The filters on this fountain cost about \$80 and they need to be changed every 3000 gallons. (8) The total cost of two fountains would be about \$2,100 plus the cost of installation. Filters would cost the school about \$100 a year.

Because C.W. Post is largely a commuter school, carrying around a re-useable water bottle may not be practical for all students. This is why it’s important not to alienate people who choose to not to take part in the sustainability efforts at C.W. Post, particularly if we want their support in the future. “There are three things you need for effective planning: time, passion and money,” say’s Mr. Kremmer. “You need two of those to be successful.” I believe that we have the time and the passion to see this initiative to fruition – but only with an effective mix of fundraising methods will the C.W. Water Bottle Project become a reality.



## Works Cited

- 1) "Basic Information - Green Building." *US Environmental Protection Agency*. 22 Dec. 2010. Web. <<http://www.epa.gov/greenbuilding/pubs/about.htm>>.
- 2) "Bottled Water and Energy." *Pacific Institute*. Web. <[http://www.pacinst.org/topics/water\\_and\\_sustainability/bottled\\_water/bottled\\_water\\_and\\_energy.html](http://www.pacinst.org/topics/water_and_sustainability/bottled_water/bottled_water_and_energy.html)>.
- 3) "Colleges Ban Bottled Water." *Revolve*. 17 Jan. 2011. Web. <<https://revolvewater.com/revolve-water-filtration-blog/colleges-ban-bottled-water/>>.
- 4) "Corporate Sponsors in Schools." *Business Pundit*. 15 June 2003. Web. <<http://www.businesspundit.com/corporate-sponsors-in-schools/>>.
- 5) "Creative Fundraising Ideas." *Alto Polimigra*. Web.
- 6) *Detroit Needs Robocop*. Web. <<http://detroitneedsrobocop.com/>>.
- 7) "Elkay EZH2O Water Cooler With Bottle Filling Station." *IraWoods.com*. Web. <<http://www.irawoods.com/Elkay-LZSDWSLK-EZH2O-Water-Cooler-With-Bottle-Filling-Station-Light-Gray-Granite>>.
- 8) "Elkay Watersentry Plus Filter." *NationalBuilderSupply.com*. Web. <<http://www.nationalbuildersupply.com/p/elkay-51300c-temp.html>>.
- 9) Gashler, Krisy. "Thirst for Bottled Water Unleashes Flood of Environmental Concerns - USATODAY.com." *USA Today*. 06 July 2008. Web. <[http://www.usatoday.com/news/nation/environment/2008-06-07-bottled-water\\_N.htm](http://www.usatoday.com/news/nation/environment/2008-06-07-bottled-water_N.htm)>.
- 10) "Grassroots Fundraising with Social Media | Profy | Internet News and Commentary." *Profy*. Web. <<http://profy.com/2008/07/21/social-media-grassroots-fundraising/>>.
- 11) "Greening School Fundraisers." *Green America*. Web. <<http://www.greenamerica.org/pubs/realgreen/articles/fundraisers.cfm>>.
- 12) "Interview With Isacc Kremmer." Personal interview. 26 May 2011.
- 13) Keen, Judy. "Wisconsin Schools Find Corporate Sponsors." *USA Today*. 28 July 2006. Web.

- <[http://www.usatoday.com/news/nation/2006-07-27-naming-rights\\_x.htm](http://www.usatoday.com/news/nation/2006-07-27-naming-rights_x.htm)>.
- 14) Medina, Jennifer. "L.A Schools Decide to Seek Corporate Sponsors." 15 Dec. 2010. Web.
  - 15) "MSBA Approved \$25 Million in Grants Through The Green Repair Program." *Massachusetts School Building Authority*. 30 Mar. 2011. Web.
  - 16) "New York State Green Building Tax Credit Legislation Overview - NYS Dept. of Environmental Conservation." *New York State Department of Environmental Conservation*. Web. <<http://www.dec.ny.gov/energy/1540.html>>.
  - 17) "Oyster Bay Main Street Association: Staff & Board." *Oyster Bay Main Street Association*. Web. <<http://www.oysterbaymainstreet.org/leadership.htm>>.
  - 18) "Roadmap to a Green Campus." *Center for Green Schools*. Web. <<http://www.centerforgreenschools.org/campus-roadmap.aspx>>.
  - 19) "Student Conservation Association Partners with ARAMARK on Earth Day Service Projects Nationwide." *HSBP*. Web.
  - 20) "SUNY Purchase Gets \$2.1 Million in Stimulus Money for Green Roof Project." *The Nature of Things*. Web. <<http://nature.lohudblogs.com/2009/10/02/suny-purchase-gets-2-1-million-in-stimulus-money-for-green-roof-project/>>.
  - 21) "What Is Corporate Social Responsibility?" *BusinessDictionary.com*. Web. <<http://www.businessdictionary.com/definition/corporate-social-responsibility.html>>.