

HSU: Takes Back the Tap 2009

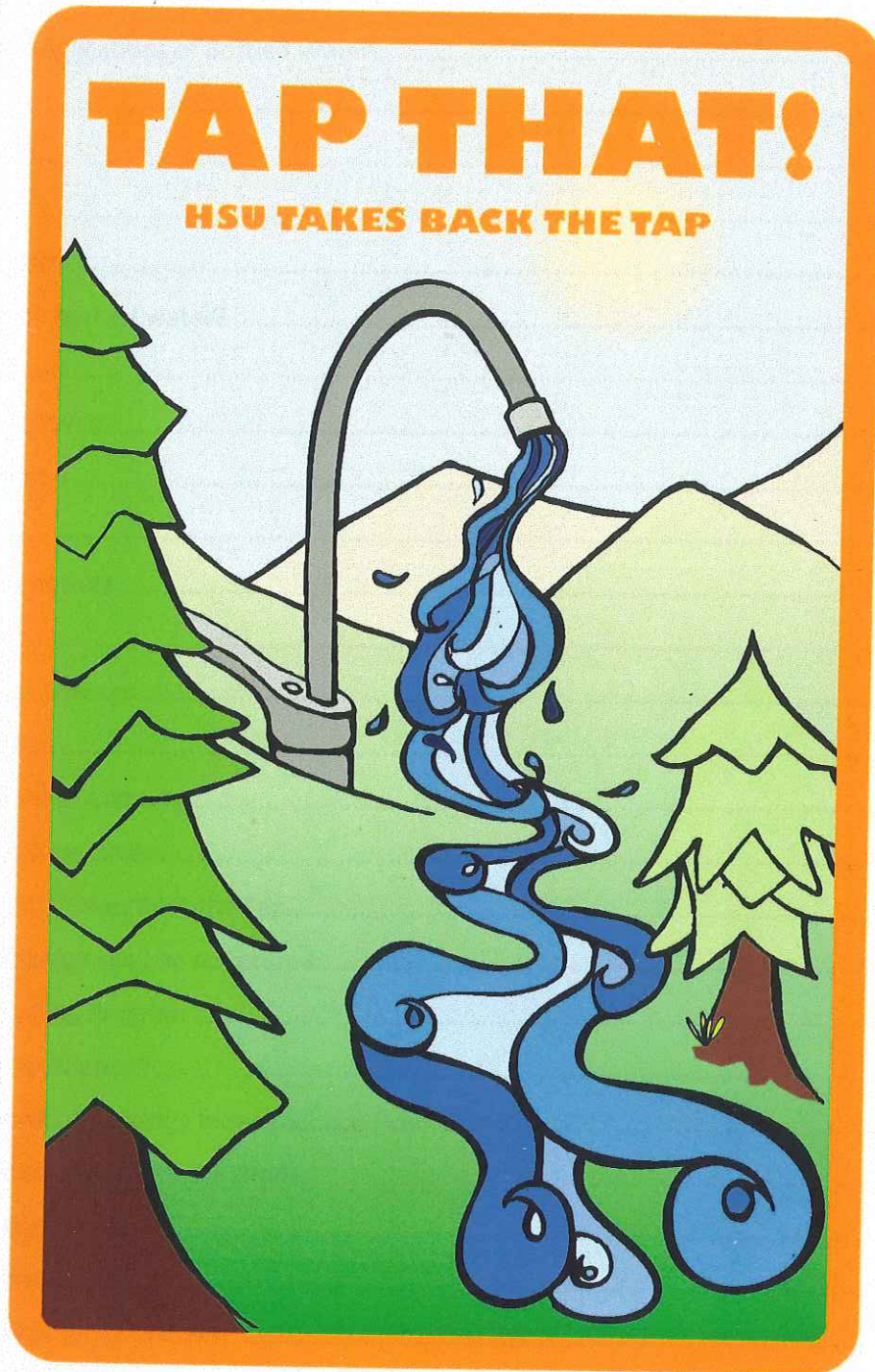


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Problem Statement

The consumption of single-use water bottles on Humboldt State University's campus causes negative environmental and social problems.

Situational Analysis of the Problem

There are many problems associated with single-use water bottles including the environmental, economical, and social implications of that use, including concerns about waste generation, proper use of groundwater, hydrologic effects on local surface and groundwater, economic costs, and health risks.

The Embedded Energy Costs of Bottled Water

Energy is required to manufacture plastic bottles, to process the water, to clean, fill, seal and label the bottles, to transport the bottled water, and energy to cool the bottled water prior to use. This energy is typically supplied by natural gas and petroleum, along with electricity from the local electricity grid.

Bottled water is sold in containers made from *polyethylene terephthalate* (PET) resin. In the United States, PET is easily recognized as recycling code '1' imprinted on the bottom of the bottle. Energy is embodied in PET material itself, and additional energy is required to turn PET into bottles. *The Pacific Institute* found that producing the PET bottles to meet global bottled water demand requires an energy equivalent to approximately 50 million barrels of oil per year (1/3rd of the total amount of energy required). The annual consumption of bottled water in the U.S. required an energy equivalent to between 32 and 54 million barrels of oil and estimate that roughly three times this amount was required to satisfy global bottled water demand.

why such a broad estimate?

The embedded energy costs of Humboldt State's water bottle consumption (including disposal) requires an energy equivalent to approximately 43 barrels of oil per academic year (see appendix 1).

Combining all the energy inputs totals, the *Pacific Institute* estimated that producing bottled water requires as much as 2000 times the energy cost of producing tap water.

The Climate Implications of Bottled Water

The energy required to meet bottled water demand is generated by fossil fuels. When combusted, fossil fuels release greenhouse gases into the atmosphere and contribute to climate change. Bottled water contributes to climate change. If the entire energy equivalent to 54 million barrels of oil were combusted approximately 44 billion pounds of carbon dioxide would be released into the atmosphere. Humboldt State's bottled water demand releases approximately 35,300 lbs of carbon dioxide into the atmosphere.

Are you including the energy content of the plastic in the bottle?

Pollution

After the production of billions of plastic water bottles, billions of empty bottles remain. Due to the "on-the-go nature" of bottled water, the Food and Water Watch estimate that less than 14 percent of the plastic water bottles in the U.S. are recycled. The other 86 percent of bottles end up in the garbage. Each year, about two million tons of plastic bottles are added to U.S. landfills. When a plastic bottle

IF so those that are land filled will not be releasing much CO2

enters a landfill, it can take hundreds to thousands of years to decay and some leach harmful chemicals into the ground, potentially polluting the soil and water. Often plastic bottles are incinerated, releasing toxic chemicals into the air or disposed of in the ocean. *na clear*

Pacific Gyre

When plastics enter the ocean they accumulate in the Pacific Gyre, a large swirling vortex of ocean currents in the Pacific caused by the Coriolis Effect. There is such an exceptionally high concentration of plastic in the region that it is referred to as the Great Pacific Garbage Patch; and it is estimated to be twice the size of Texas. In 2001, in the *Marine Pollution Bulletin*, reported that there are six pounds of plastic floating in the Pacific Gyre for every pound of naturally occurring zooplankton.

Want about gyres?

When plastic enters the oceans, it does not decompose. Instead, the durable material slowly photo-degrades, a process whereby sunlight breaks it down into progressively smaller pieces, these are called "nurdles." The degradation eventually yields individual molecules of plastic. These nurdles resemble food to filter feeding organisms, such as zooplankton and jellyfish; they often mistakenly consume plastic pieces. Hideshige Takada, an environmental geochemist at Tokyo University, has discovered that floating plastic fragments accumulate DDT, PCBs, and other toxic and carcinogenic chemicals. When organisms ingest plastics they are inadvertently consuming toxins. These toxins can accumulate within the food web, passing from zooplankton to fish to human beings, with unknown consequences.

Social Issues

Water as a public trust resource and is a human right which should not be sold as a commodity. The corporations which bottled water threaten local control of water supplies in communities across the U.S. and around the world when they aggressively build water bottling plants over community protest. Water bottling companies are taking water that communities need and are selling that water hundreds or thousands of miles away for a profit. This is harming the environment by depleting aquifers and other groundwater sources. With the increase in bottled water sales, local tap water is used less which can cause infrastructure of municipal tap water to go by the way side. The deterioration of these pipes can lead to unhealthy tap water which is detrimental for people who cannot afford to buy bottled water.

Health and Safety

Bottled water corporations use clever marketing and misleading advertising that makes people doubt the safety and quality of their own tap water. In reality, bottled water is less regulated than public water systems, and studies reveal that bottled water can actually contain harmful bacteria and other contaminants. Bottled water is of unknown purity and has been found to contain contaminants such as arsenic, microbiological contaminants and toxic chemicals. Public water systems are required to disclose the source and quality of their water and are accountable to the public. Often, water bottlers are not. Bottled water is very lightly regulated, by the FDA. There is only one person regulating the entire bottled water industry. Even the plastic container could be harmful to the consumer. The plastic that is used may leach toxic chemicals into the water. Also phthalate, a chemical used in PET plastic are potential human cancer agents. The FDA does not test for phthalates. Plastic can poison your water.

Why do we drink bottled water?

Many people drink bottled water for various reasons including convenient transportation, guaranteed purity, preferred taste, and, often subconsciously, as a status symbol. Many of these justifications, however, are not valid.

First of all, it is equally convenient to carry a refillable water bottle. It can be refilled at any tap, and does not need to be disposed of. When a single-use plastic bottle is empty, another must be purchased and the waste must be dealt with. Often single-use water bottles are thrown in the trash and not recycled.

Secondly, tap water is highly regulated by the government and state and is insured to be at an acceptable safety level. In the U.S., public water is regulated by the Environmental Protection Agency (EPA), which requires multiple daily tests for bacteria and makes results available to the public. The Food and Drug Administration, which regulates bottled water, only requires weekly testing and does not share its findings with the EPA or the public.

Thirdly, some consumers prefer the taste of bottled water. There are factors that can quickly affect the taste of water in a bottle like how exposure to extreme heat or cold can cause the plastic to degrade, allowing toxins into the water. Also, the taste of tap water can easily be altered through a low cost, reusable filter, like a Brita pitcher.

Finally, though our society is highly influenced by advertisements and status, it is important to consider the effects on the environment by following this trend. In this realm, it is encouraging to see that bottled water is losing its respect due to exposure by environmental movements.

Mission Statement

The mission of *HSU: Takes Back the Tap* is to reduce the purchase and use of single-use plastic water bottles on HSU's campus and encourage local tap water consumption.

Goals and Objectives

Our goal is to reduce the negative environmental and social effects associated with bottled water.

- Promote the consumption of local tap water
- Promote refillable drinking containers
- Reduce single-use plastic water bottles on campus
- Educate students, faculty and staff about bottled water

Long-term Goals

Our long-term goal is the eventual phase-out of bottled water on Humboldt State's campus. We would like to see a cultural and behavioral shift that makes this campaign obsolete within the next ten years.

Objectives

To achieve our goals we have set these specific objectives:

- Reduce the number of single-use water bottles used on the HSU campus by 20% within two years (Spring 2011).
- Our long-term objective is to have a 50% reduction in single-use plastic water bottle within 5 years (Spring 2014).
- Total phase-out (95% reduction) within 10 years.

Evaluating Alternatives

Our group has considered a number of alternative projects that would help us address our problem: the consumption of single-use water bottles at HSU. Although awareness is growing among the student population and many already use refillable containers, still nearly 80,000 water bottles are sold per academic year.

Alternatives

1. Devise an education campaign where the primary audience is the student population, followed by the greater campus population, faculty and staff. The education campaign will focus on providing students with information and creating creative messages that students can relate to about their water consumption choices.
 - Pro: will create lasting behavioral changes and may influence the greater community population
 - Con: Time and energy intensive. Many people are needed from all disciplinary majors.
2. Barricading the water bottle vending machines/refrigerator coolers.
 - Pro: This method would likely prevent purchase by even the most persistent bottled water users.
 - Con: This method prevents people from acting on behaviors, it does not teach them new behaviors. The results would only be temporary and site specific.
3. *Hydration Stations*
 - Pro: The design of the Hydration Stations improves access to tap water and makes refilling usable containers easy and convenient. They make tap water more appealing to bottled water drinkers; remove aesthetic impurities (chlorine and particulates from the pipe system) that many people object to; they help to overcome people's negative perception of tap water because the water is dispensed in a hygienic and aesthetically appealing way and they look cool—people will want to use them.
 - If we want to encourage bottled water drinkers to switch to tap water we need to provide water that is as aesthetically appealing as bottled water and dispensed in such a manner as to help overcome their negative perceptions of tap water.
 - Con: The stations cost ~\$2,600 each after installation. The filters need to be replaced every 2,000 gallons, this is an ongoing cost. This requires funding from an outside source such as Associated Student Funds or through the Humboldt Energy Independence Fund.
4. SLAM Fest

- Pro: This is a tabling event where our message can be heard by sympathetic listeners attending a "sustainability" festival. SLAM fest would allow us to reach members in the community, not just affiliates of HSU. Being able to provide education on our topic as well as being able to raise money.
 - Con: This event would only reach attending individuals and only happens once a year.
5. Showing the film "F.L.O.W." or other water related films
- Pro: This film could be shown on campus to maximize availability to students. This film clearly informs its viewers on to the current social, political and economic aspects surrounding water rights in today's world.
 - Pro: Additional copies could be purchased and resold to attendees to fundraise
 - Con: May be a copyright violation.
6. Kissing Booth.
- Pro: This action would make much needed money for the campaign. No merchandise necessary.
 - Con: Might not be seen as a professional way to make money for the collective needs. Might not have customers.
7. Selling food on the Quad
- Pro: Fundraising opportunity to make money for campaign.
 - Con: Need to sell something desirable and able to make a profit
8. Negative propaganda against bottled water users
- Pro: Gets a result from the viewer
 - Con: This method makes people defensive and unlikely to listen to our message. Promoting our ideas and beliefs in a positive and professional ways is best to reaching an audience.
9. Tabling on the HSU quad.
- Pro: This action would allow us to educate the student body to the harmful effects of single use plastic bottles and to promote the drinking of municipal tap water.
 - Con: Time consuming and energy intensive.
10. AS resolution.
- Pro: If passed it lets our group know that the student administration is behind us in our goal, a proposal to phase out single use plastic water bottles being sold through Student Dining and Services.
 - Con: If it doesn't pass that means that we will have to double our efforts considering that the student council will not help us help the world.
11. Acquiring materials for sale (t-shirts, stickers, re-usable bottles).
- Pro: This sends the affected individual with not only knowledge but something tangible that contains the overall message of our position. This also allows us to raise money for whatever deems needed by our group.
 - Con: This may create a monetary deficit within the group, where will the money come from?
12. Retrofit existing drinking fountains with filtration to improve the aesthetic quality of the water.
- Pro: This would be the best way to get filtered water to the student body without creating any new dispersal sites.

- Con: This idea has proven to be an expensive process that would also be hard to implement due having to retrofit the existing fountains with filters.
13. Create educational outreach materials (paper and digital) to encourage a change in student behaviors and awareness.
- Pro: Being able to reinforce the ideas about protecting the environment with day to day activities is a key component in making change.
 - Con:
14. Reusable drinking container drives.
- Pro: This would allow for student s to receive containers for drinking without having to purchase their own containers. The containers would be donated to limit costs. Sanitization of the jars would still have to be discussed
 - Con: Having to find a place to wash and sanitize the containers consistently may be a problem.
15. Have students sign a pledge not to buy single use beverages.
- Pro: This would be an immediate way to show that the student body supports our views in this campaign.
 - Con: Not receiving a substantial amount of signatures may show a lack of interest among the student body.
16. Get donations of reusable drinking containers from retailers.
- Pro: This would help to fund our reusable drinking container drives.
 - Con: Time and energy intensive.

Implementation Strategy

What we did

Our first goal is to educate the campus about the quality of local tap water and encourage the use of local water. Education will include information about the dangers of plastics to both human and environmental health; social and economic issues associated with the commoditization of water, and alternatives to using single-use plastic water bottles.

Education opportunities include(d):

- Outreach to incoming freshmen and EOP students
- Tabling at school and community events
- Making presentations to:
 - Classes: NRPI 105, 309B, 425 & PSCI 110
 - Department heads
 - Associated Students
 - The Administration
- Writing articles for the local newspapers
- Creating outreach & promotional materials to be displayed near where people purchase and consume water.

We created pledge sheets for people to sign to pledge to stop buying bottled water -- and to encourage those around them to do the same. With the pledge sheets we are entering the names and emails into an Excel database and then uploading them into an email contact list. We will be using the contact information in the future to survey students about their ongoing bottled water choices. At this point we have collected over 175 signatures (see Appendix 3).

On April 7th HSU Takes Back the Tap sponsored a free showing of the award winning documentary *'Flow: For the Love of Water'* which had ~40 students in attendance. On April 25th, the campaign tabled at the Sustainable Living Art and Music Festival, at which we provided information of the negatives of single use bottled water, had people sign pledges to stop buying bottled water, conducted a 'Tap Water Taste Test Challenge', and sold merchandise. We also tabled at the Sustainable Nations Event on April 30th.

To spread the campaign's message the group printed the HSU Takes Back the Tap illustration on t-shirts and stickers and printed our message "Plastic Bottles= Pollution. DRINK LOCAL WATER" on re-usable metal water bottles.

A grant was written to the Humboldt Energy Independent Fund (HEIF) to fund two projects (see appendix 1). The first project is a series of short, student implemented, educational films highlighting the energy intensive nature of bottled water. The second project was to fund the purchase and installation of three *Hydration Stations* on campus.

The Hydration Stations are filtered-water dispensers that improve the accessibility of tap water to students and faculty while helping to overcome the perceptions people have about tap water. These stations will help to reduce bottled water consumption because they increase the accessibility of tap water to students and faculty, they remove aesthetic impurities (chlorine and particulates from the pipe system) that many people object to, they help to overcome people's negative perception of tap water because the water is dispensed in a hygienic and aesthetically appealing way and they look cool—people will want to use them.

On April 15th, 2009 we heard back from the granting committee that the video project would be funded and that the Hydration Stations were still being considered. Additional addendums have been compiled and turned into the committee (see appendix 2). The committee has not made a decision as to whether or not they would fund the Hydration Stations at the time this report was written.

An Associated Students resolution was written with the intention to gain the Associated Student Council's support for our campaign to reduce single-use plastic water bottles on campus. The resolution to *Support of the drinking and utilization of local water and the phasing out of the sale of single-use water bottles at Humboldt State University (HSU)* was passed unanimously on April 27th, a copy of the resolution can be found in Appendix 4.

Articles were written for the April 2009 *ECONews!* (see appendix 5), for the Campus Recycling Program's newsletter, *the Recycler*, and HSU Takes Back the Tap's SLAM Fest activities were publicized in the April 28th 2009 the *Lumberjack*. A press release (see appendix 6) was sent to the *Lumberjack* on April 30th, we are expecting to be published in the final issue of the semester's paper.

Several campaign messages were written for an environmental communications class' (NRPI 309B) various assignments. These projects included a persuasive speech, filled with statistics, to get students to stop buying bottled water; and a radio ad and a poster which both focused on the benefits of tap water (see appendix 7 & 8).

The "HSU Take Back the Tap" Campaign is aligning itself with several established on-campus entities; including the Campus Recycling Program (CRP), the Natural Resource Club, and the Coalition for Environmental and Social Responsibility. These groups add potential resources and institutionalism to the campaign.

Next year, CRP will have a stipend coordinator position that will be in charge of implementing certain aspects of the HSU Takes Back the Tap campaign as per the conditions of the HEIF grant (see Campus Recycling Program for job description). This coordinator position will provide managerial oversight and long-term stability to the campaign.

Who we talked to and why

In order to establish where support and resources existed within the campus administration, faculty and staff and to further the mission of the campaign we had to speak with various college staff.

We spoke with the Director and the Manager of Housing and Dining Services, Ron Rudebock and Eddie Aguilar. Mr. Rudebock is very supportive of the campaign and has given the go-ahead to install Hydration Stations and incorporate signage within the markets and dining centers; he is interested in selling reusable containers at the various marketplaces in order to subsidize the loss of profit from the decreased sales of bottled water. Mr. Aguilar has committed to sending the CRP coordinator monthly sales figures for bottled water on campus.

The Director of the Athletics Department, Dan Cullen, is supportive of the campaign mission and has given his support to install a Hydration Station within the Kinesiology Building. He will not support the phase-out of bottled water on campus because the Athletics Department has an *exclusive* contract with Pepsi and Pepsi heavily supports the Athletics Department with monetary contributions. Mr. Cullen did acknowledge that there is not a known minimum amount of *Desani* water that needs to be purchased by the Athletics Department to fulfill their commitments with Pepsi. Therefore, we can make the assumption that, with proper encouragement, they can sell reusable containers at their sporting event concession stands, decrease the amount of bottled water they sell and not violate their contract with Pepsi. Mr. Cullen's son works for Klean Kanteen, his name is Corey.

The Director of the University Health Center and the Education Coordinator, Mary Grooms-Vancott and Mira Freidman, are both supportive of the campaign. They are willing to hang health and water related posters and play videos on their T.V. screen. Ms. Freidman has a wealth of resources for us to use including: a laminator, paper cutter, and a "wheel-of-fortune." Ms. Freidman has grant funding to create outreach materials that promote "Option B," a program to give students with an option besides drinking. She is willing to create some outreach material that has both their logo (Option B) and our logo on the material.

The Director of the Humboldt Orientation Program (HOP), Gail Wootan, is also very supportive. In the upcoming HOP sessions for incoming freshmen, she and the administration would like to introduce the college's hallmark message of sustainability at the beginning of their college careers. Ms. Wootan is currently generating ideas of how to incorporate that idea into the HOP sessions. She said that she would like to create a "10 things you can do to be sustainable at HSU" power-point slide; one of those things would be drink from reusable containers. She offered a series of times when the campaign could table during the orientation program. She also offered to include any paper campaign material into the HOP folder that the new students receive (this might not be the best use of our time or resources because it is ~1600 pieces of outreach material and it is questionable whether or not it is read). In the future there may be more room for additional **digital** campaign outreach material to be created with the intent of HOP distribution.

Two professors within the Sociology Department, Tony Silvagio and Betsy Watson, are interested in the campaign and helping with monitoring and analysis. Mr. Silvagio is a wealth of information for community organizing, talk to him if there are any question regarding organizing and leadership. He also teaches a class on community organizing through the sociology department. Sociology professors and senior sociology students are a resource that needs to be looked into much more heavily. We need commitment by either a professor or a student to take on the responsibility of devising a social survey, gathering responses, analyzing the data and then making a report of the results. This effort needs to take place every semester. This is part of the requirements written into the HEIF grant and into the job description of the CRP coordinator responsibilities.

Humboldt State Plant Operations, these are the people that make things work on campus. Tall Chief Comet (T.C.), is the Director of Sustainability, the advisor for the Campus Recycling Program and on the Humboldt Energy Independence Fund committee, he is a wonderful asset to the campaign and will help and answer any questions that you have. Tim Moxon is the Director of Plant Operations, he makes the final decisions regarding campus operations, and he too is on the HEIF committee. Mike Cline is the plumbing manager; he is supportive of the campaign and would like to help. In the future, drinking fountain surveys should be conducted and Plant Operations should be contacted regarding any fountains that need servicing.

Aldaron Laird is on the Board of Directors for the Humboldt Bay Municipal Water District and is heading the regional campaign "Tap the Mad" to encourage local tap water consumption. He is willing to meet with students and answer any questions regarding our local municipal water resources.

Monitoring and Assessment

The primary method of assessing the effectiveness of the HSU: Takes Back the Tap campaign and the associated HEIF project will be through analysis of plastic water bottle sales on the HSU campus. The Take Back the Tap (TBTT) coordinator position at Campus Recycling Program job description includes reviewing disposable water bottle sales. Those sales figures will be forwarded to the Take Back the Tap coordinator by Eddie Aguilar, Depot Manager. Eddie is committed to supplying, on a monthly basis, sales figures from all campus point-of-sales, including the Depot, the J, the Giant's Cupboard, the South Campus Marketplace and BSS Market, to the TBTT coordinator. James Robinson (ENGR student) has

created a spreadsheet in Excel which records unit and total sales of plastic water bottles and calculates Total Mass of Units, Total Mass of Water, Mega Joules (MJ) of Energy Consumed, Equivalent Barrels of Oil, and pounds of CO₂ emitted. To spotlight transparency and equal distribution of information, every semester reports will be provided to the HEIF committee, HSU administration, and Associated Students. Also, these same reports conjoined will be summarized into articles to be submitted to media outlets, such as The Lumberjack, Eco News, the North Coast Journal, and other interested media.

Sociological Surveys will monitor behavioral changes directly through student interviews and surveys. The Sociology Department at HSU is committed to assisting Take Back the Tap by recommending students who are interested in conducting said interviews and surveys as class projects. If no student is interested, Tony Silvaggio, Ph.D. professor of Sociology at HSU, has expressed his willingness to conduct survey and analyses. Also, an email list will be generated from pledge signatures gathered at campaign events which will be transferred into a database. The database will be utilized to conduct personal information surveys via the internet.

The assessment process, much like the entire Take Back the Tap campaign and project, is an amalgamation of committed Humboldt State programs, departments, clubs, staff, faculty and most importantly, students working together to effect change, and keep Humboldt State University's commitment to sustainability going strong.

The Future of HSU Takes Back the Tap

This campaign has a solid foundation for a successful and effective future. There are so many ways in which the members of the campaign can chose to use their individual skills to further the mission of HSU Takes Back the Tap.

How the campaign shall be structured

The campaign should be a non-hierarchical collective of individuals with the same goal in mind: reducing the negative environmental and social impacts associated with single-use water bottles by reducing the amount of water bottles sold on campus. These individuals should have a passion for learning about campaign organizing and making stuff happen. The HSU Takes Back the Tap club/collective will be officially forming at the end of spring 2009 made up of individuals, from interdisciplinary backgrounds. At the beginning of every semester the collective will plan a course of action and will take on responsibilities based on individual preference and desire. They will be held accountable for their responsibilities by the other members of the collective. At the end of every semester the members of the collective shall turn in a digital report of what they have done and accomplished during the semester, (including any materials they wish to be used in the future by the campaign) to the CRP coordinator.

There shall be a Treasurer position within the club. This person, appointed or willing, shall be in charge of collecting and dispersing all funds as directed by the campaign collective. Monthly reports shall be made to the CRP coordinator and the collective.

There are plenty of academic channels for "killing two birds with one stone," meaning you can get school credit and campaign at the same time. The Environmental Science Capstone class for

sustainability is one such avenue, many class projects can count for the campaign and also, there is the possibility of creating an internship position under either CRP or Richard Hansis' guidance.

Campus Recycling Program

Campus Recycling Program has agreed to create a coordinator position, which will be paid, in order to ensure certain responsibilities are fulfilled as per the conditions of the HEIF grant. These responsibilities include:

- Data entry for pledge information
- Building a contact database
- Sending out emails and updates to people that sign-up for information when they pledge
- Answering emails
- Updating the website
- Completing bottled water sales analysis from Housing and Dining every month
- Every semester ensuring that someone from the sociology department is conducting social surveys
- At the end of every semester all data analyses (bottled water sales and survey reports) that are monitoring the effectiveness of the campaign will be compiled into a report and distributed to the HEIF committee, the Administration and to media outlets (in the form of a press release).
- At the end of every semester a report shall be compiled based on the accomplishments of the campaign individuals. This will be included with the qualitative data and sent to the HEIF committee, and the Administration.
- Scheduling presentation appointments with Rollin Richmond's administrators twice a semester. The first time it will be to let them know what the campaign is planning on doing during the upcoming semester and then again at the end of the semester to let them know what has been accomplished.
- Event planning—knowing when all the major campus events are and notifying club about all tabling opportunities.
- Sending out press releases to the appropriate outlets as accomplishments occur.
- Attending all club meetings and coordinating with the club members.

What needs to happen?

The campaign needs a website. The website should include:

- Everything that has happened, is happening and will happen
- Water resource information
- Have a pledge form sign-up sheet
- Post event listings
- Let people know when and where meeting take place
- All semester reports should be posted
- Press releases
- Campaign organizing resources for other schools to do what we are doing

There should be a Drinking Fountain Survey and Assessment

- Taste, water pressure, cleanliness, aesthetic appeal
- Need to persuade, or encourage Plant Ops/Maintenance to fix and clean specific drinking fountains.

Why are HSU students drinking bottled water? Surveys need more social surveys. ?

Write another grant to HEIF to fund the Hydrations Stations (or other type of device that improves access to drinking water), if they are not funded this semester.

Creating Outreach Events:

- Table at HOP this upcoming August 2009
- Movie showings: Flow & other water film documentaries
- Publicity events in the quad to get people's attention
 - Tap Water Taste Test Challenge—it needs to be perfected make it faster, little wasteful, more effective and easier to do.
 - Act out staged scenes in the quad, get drama students involved with the campaign
- Pledges
- Fundraise
 - To make money to get more signage and merchandise
 - To buy replacement Hydration Station filters

Creating Outreach Materials:

- Need to make effective Interpretive signage for the Hydration Stations (if approved)
- Need to make more tap water promoting signs
- Talk to Mira Freidman of the Health Center to get bottles made with the *Option B* and TBTT logos printed on them.
- Talk to Residence Life Coordinators—we need to get outreach materials into the dorm halls.
- Make maps to show where drinking fountains are
- Displays of where free & tasty water is available
- More promotional materials (t-shirts, stickers, bottles)
- Need to make more signs and posters get them up everywhere (lots of variations)
- Radio ad (get it played) make more...
- Talk to Jenn Tarlton about designing Environmental Messages
- Presentations in classes, get more people involved (marketing, business, graphic design, interpretation, advocacy, political science majors)
- Write articles for the Lumberjack

People to talk to:

- We need to talk to Housing Services (the dorms) about them giving out Stainless steel drinking containers instead of the big crappy plastic mugs they give out.

- We need get Housing and Dining to sell and display reusable containers in the places where water is sold; they need to be of all price variations too.
- Get involved with EOP and spreading the message to incoming students that are often from minority backgrounds about Humboldt's water resources and quality.
- Need to make presentations to the Administration twice a semester.
 - These need to be super professional. Dress & look professionally. Use power-point sparingly, but effectively.

Tips:

- There is ~\$80,000 in the AS Funds that might be able to pay for the Hydration Stations; will they help to pay for signs? Find out about this.
- Everyone on campus needs to know about this campaign. Get talking.
- When tabling: **Be Active, don't just sit there and hope people will come to you. We need to get people's attention**
- Tabling Kit: Display Board, pledges, stickers or other merchandise, donation jar
- Let people know how to get involved with the campaign, we welcome all to help with our mission.
- Handing out paper fliers contributes to waste (something we are opposed to), but we should have a WEBSITE to send them to for more information. We need to give people things that stick (buttons, magnets, stickers, etc) and aren't thrown away.
- Poster Ideas: Make poster of the "Dos and Don'ts" of water drinking (Think Glamour Magazine)

Appendix 1: Humboldt Energy Independence Fund Grant
HSU: Takes Back the Tap

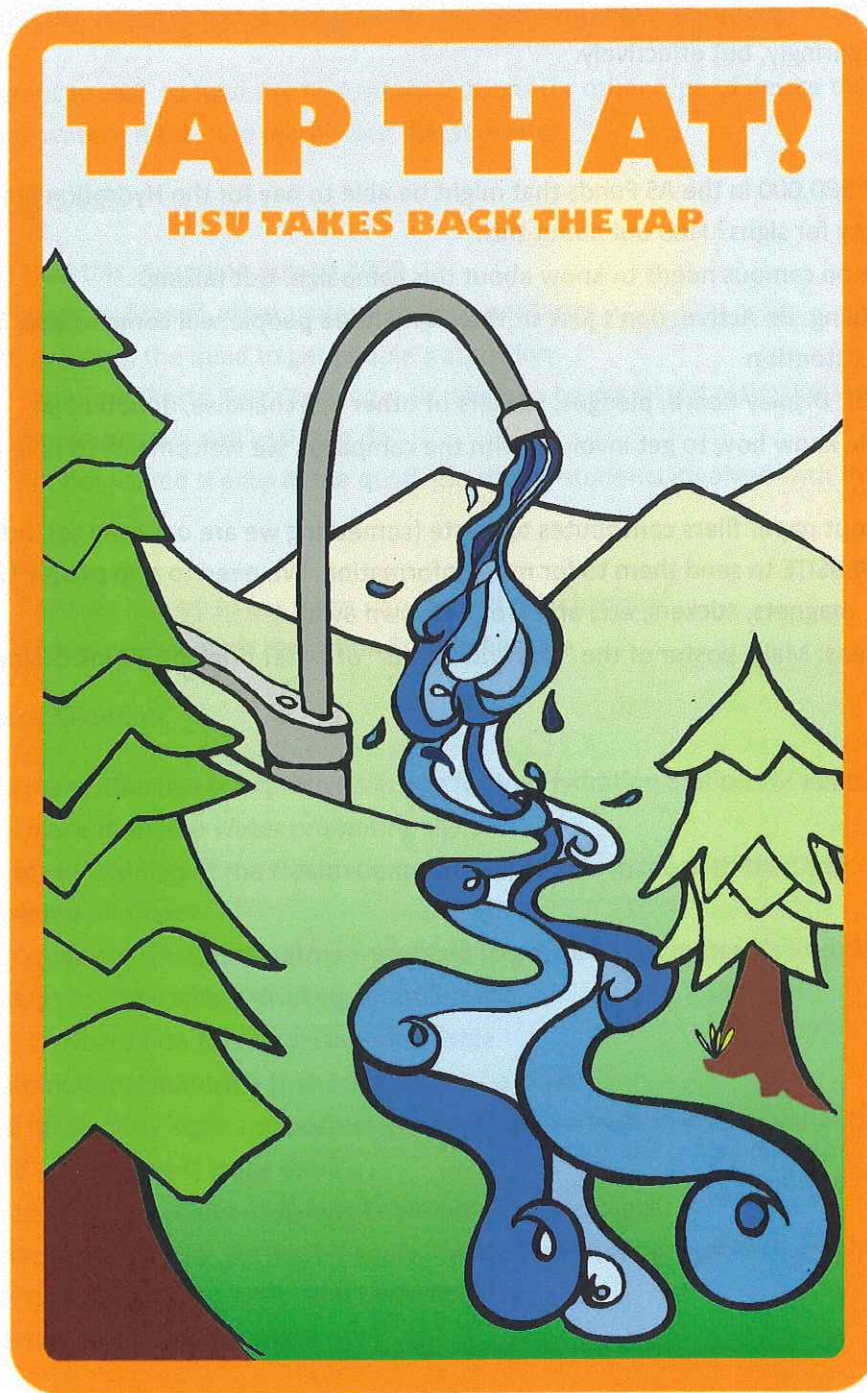


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By: Natalynne DeLapp, James Robinson & Gabriel Salazar

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Mission Statement:

The mission of "HSU: Takes Back the Tap" is to reduce the purchase and use of disposable plastic water bottles on HSU's campus and encourage local tap water consumption.

Project Description:

The goal of the project is to reduce the environmental impacts of energy use associated with bottled water at Humboldt State. To achieve this goal the project seeks to decrease the purchase and use of disposable water bottles on campus. This will be accomplished by educating students and faculty about the environmental impacts of bottled water, overcoming existing public perceptions of tap water and providing alternatives to bottled water. We propose two related projects that may help reduce the environmental impacts of energy use associated with bottled water at Humboldt State. These solutions to the project's goals are presented in a multi-tiered proposal to allow flexibility in funding choices.

1. Video Shorts

This is a student-implemented project with the goal of creating short (less than one minute) entertaining and informative videos that will draw the viewer's attention to the energy embedded in every bottle of water they purchase and reduce negative stigmas related to local tap water. The video will be shown in a few classroom settings and at campaign events on campus as well as being posted to YouTube. Lastly, the video can be randomly played in the Jolly Giant Commons on their closed-loop video channel, at HOP events (see Appendix D) and the University Health Center (confirmed).

2. Hydration Stations

"Hydration Stations" are touch-free, hygienic, state-of-the-art, filtered drinking water dispensers (see submitted electronic file). The hydration stations provide an alternative to bottled water, while promoting both of the goals of the project. While the water quality at HSU is known to be very high (see Appendices E,F), often the aesthetic qualities of the water from individual drinking fountains is less than desirable, this is mainly due to erosion of pipes or leaks. Installing Hydration Stations will provide students and faculty with access to convenient, filtered water on campus and may reduce reliance on bottled water.

The project seeks to install three "Hydration Stations" on HSU's campus. The Hydration Stations would be installed in the Depot, the South Campus Market and the Kinesiology Building. If the sales of bottled water have been proven to be reduced by 20%, a renewal proposal may be written for a second phase of funding that will be used to purchase three additional Hydration Stations that would be installed in the library, "the J," and the BSS Marketplace.

Need Statement:

One of the problems associated with disposable water bottles are embedded energy costs. These embedded energy costs include the production and transportation to the disposal of the used plastic

water bottles. When the embedded energy costs of HSU's water bottle consumption are revealed we can see just how energy intensive our habits are. The production, transportation, storage and disposal of bottled water to meet HSU bottled water demand requires approximately 43 barrels of oil per academic year and releases 16,013 kg (35,300lbs) of carbon dioxide into the atmosphere. By educating students and faculty about the problems associated with disposable water bottles and providing alternatives, we expect bottled water sales will decrease. This will reduce the embedded energy expenditures for water bottles at HSU.

This student driven project coincides with HEIF's mission to reduce the environmental impact of energy use at Humboldt State University through student driven projects.

The project proposal meets all five of HEIF's goals.

- The project is student developed, implemented and monitored;
- Students will measure, analyze and report quantitative (bottled water sales figures) and qualitative (student surveys) results;
- The Environmental Science Practicum class, Theater Arts Department and the AS Campus Recycling Program will implement the project;
- One of the project's main goals is active campaigning and increasing public awareness through a variety of media and event channels.

Outcome:

The goal of this project is to reduce bottled water sales by 20% within three years. This will directly result in a savings of 3,202 kg of CO₂ emissions and 51,475 MJ per year. Currently, 78,702 bottles are sold on campus per year (see Appendix C).

Students, faculty and HSU Department Heads are very supportive of the HSU: Takes Back the Tap project and campaign. Many are sympathetic to the cause and understand the importance of this issue but, due to other factors, such as public perception, convenience and aesthetic preferences, still choose bottled water over tap water. Successful implementation of the project will result in an outcome that addresses these concerns and achieves the goals of the campaign.

Students will learn about the unsustainable nature of disposable water bottles, learn about appropriate alternatives and in turn, we expect, be motivated to change their water consumption behaviors. Additionally, the use of reusable bottles and the consumption of free tap water will save students thousands of dollars that would have been spent on bottled water.

Students involved with the project's implementation, such as through creating video materials, contributing to outreach campaigns, coordination, advocacy, analysis, and discussion, will have a heightened educational college experience.

Although HSU will not receive monetary benefit, the community will benefit from greater health, the environment will benefit from reduction in carbon emissions and fewer truck deliveries reduce road traffic.

Student Involvement:

HSU Takes Back the Tap is partnering with Campus Recycling Program and the Natural Resources Club to actively coordinate the project and campaign on campus to educate students and teachers about the embedded energy costs of single-use plastic water bottles. They will spread awareness via tabling at various events, through the educational video shorts, signage, and through various media outlets. The campaign is actively partnering with Campus Recycling Program and Renewable Energy Student Union and we are seeking to include Green Campus and CCAT into our coalition. The coalition of clubs along with the ENVS Practicum classes will be implementing the project in the future.

Students from Ann Alter's "Social Change New Media Productions" class will have the opportunity to enter a design competition in spring semester 2010. This will be handled with an RFP similar to the Old Music Building's art installation process..

Implementation:

Housing and Dining Services and Plant Operations along with a coalition of students will install the Hydration Stations. The coordinator for Campus Recycling Program will be in charge of monitoring and replacing the Hydration Station filters as needed. Ann Alter will announce an RFP for her students in the "Social Change New Media Productions" class (TFD 477) to design the short video series. The coalition of students will implement the video shorts and the educational components of the campaign with the help of Gail Wootan from HOP and the University Health Center.

Partners:

The project is partnering directly with the AS Campus Recycling Program (CRP). CRP has agreed to include the costs of Hydration Station filters into their budget after the funds from HEIF expire. Secondly, CRP is creating an additional coordinator position to implement the "HSU Takes Back the Tap" project, monitor the effectiveness of the project and replace the Hydration Station filters (see Appendix D). The new coordinator has not yet been decided.

Ann Alter is confirmed to allow a design competition be instituted in her class for Spring 2010. Theater Arts major, Kristin Gierman, is committed to assisting in the filmmaking process.

Tony Silvaggio, Ph.D. professor of Sociology at HSU, has expressed his willingness to conduct survey and analyses when students are unavailable to shoulder the task as a class project.

"HSU Takes Back the Tap" is a student-organized, grass-roots campaign that will work in tandem with the CRP Takes Back the Tap coordinator. "HSU Takes Back the Tap" is also partnering with the Natural Resources Club. The campaign is working to heighten awareness, and promoting alternatives. They are designing outreach materials, tabling at events and collaborating with other campus clubs to build a support network. They are also actively lobbying the University Administration, Associated Students, and various university departments to support the goals of the campaign. The campaign is not requesting funds from HEIF at this time.

Other entities are providing various means of support and assistance, including Eddie Aguilar and others of HSU Housing and Dining Services, the Humboldt Orientation Program (HOP), the HSU Environmental Science Practicum class, the HSU Athletics Department, HSU's University Health Center, the Food and Water Watch's national campaign "Take Back the Tap," the Humboldt Bay Municipal Water District's local water campaign "Tap the Mad."

Timeline:

See Appendix B

Sustainability:

The only recurring costs associated with the project are filter replacement. CRP has agreed to include the costs of Hydration Station filters into their budget after the funds from HEIF expire. Also, CRP is creating an additional coordinator position to implement the "HSU Takes Back the Tap" campaign, monitor the effectiveness of the project and replace the Hydration Station filters (see submitted electronic file for Hydration Station Brochure) "HSU Takes Back the Tap" is partnering with the Natural Resources Club, which will provide institutional structure and a level of permanence to the campaign. As long as the commitment of the said entities remains intact, long-term self-sustainability of the project is realistic.

The video shorts will be designed and filmed by the Theater Arts Department and displayed in "the J" periodically as well during every HOP session. Gail Wootan will assist with working the videos into HOP's presentations.

Assessment:

The primary method of assessing the effectiveness of the HSU: Takes Back the Tap campaign and the associated HEIF project will be through analysis of plastic water bottle sales on the HSU campus. There will be a Take Back the Tap (TBTT) coordinator position within the Campus Recycling Program whose job includes reviewing disposable water bottle sales. Those sales figures will be forwarded to the Take Back the Tap coordinator by Eddie Aguilar, Depot Manager. Eddie is committed to supplying, on a monthly basis, sales figures from all campus point-of-sales, including the Depot, the J, the Giant's Cupboard, the South Campus Marketplace and BSS Market, to the TBTT coordinator. James Robinson has created a spreadsheet in Excel which records unit and total sales of plastic water bottles and calculates Total Mass of Units, Total Mass of Water, Mega Joules (MJ) of Energy Consumed, Equivalent Barrels of Oil, and pounds of CO₂ emitted. To spotlight transparency and equal distribution of information, every semester reports will be provided to the HEIF committee, HSU administration, and Associated Students. Also, these same reports conjoined will be summarized into articles to be submitted to media outlets, such as The Lumberjack, Eco News, the North Coast Journal, and other interested media.

Sociological Surveys will monitor behavioral changes directly through student interviews and surveys. The Sociology Department at HSU is committed to assisting Take Back the Tap by recommending students who are interested in conducting said interviews and surveys as class projects. If no student is

interested, Tony Silvaggio, Ph.D. professor of Sociology at HSU, has expressed his willingness to conduct survey and analyses. Also, an email list will be generated from pledge signatures gathered at campaign events which will be transferred into a database. The database will be utilized to conduct personal information surveys via the internet.

The assessment process, much like the entire Take Back the Tap campaign and project, is an amalgamation of committed Humboldt State programs, departments, clubs, staff, faculty and most importantly, students working together to effect change, and keep Humboldt State University's commitment to sustainability going strong.

Appendix A: Budget

Project Title HSU: Takes Back the Tap

Grantee Implemented Project Budget

Category (list major items)	Unit (e.g. miles, each, etc.)	Cost per unit	Total cost	Amount requested from HEIF	Matching contribution to be provided by applicant or other source	Who/what is the other source?	Is the matching contribution confirmed or potential?
Durable equipment							
Hydration Stations	3	1575	4725				
Misc. Parts	3	50	150				
Consumable supplies							
Replacement Filters	12	42	504				
Video equipment	1	2000	2000				
Stipends for student participants							
Geographers	3	300	900				
Professional services							
Charge-back time for numbers	9	56.42	507.78				
Travel							
Other							
Continuous filters	1 per semester				\$42 per semester	CRP	confirmed
TOTAL:			8786.78				

Appendix B: Timeline

HEIF Timeline and Outcome Template

Project Title HSU: Takes Back the Tap

Activity	Expected number of weeks to complete	Expected outcome	Responsible party
Install hydration stations	3	Installed filters	Housing and dining
Video design competition	12	Three 30 second videos	Students/videography department
Monthly assessment reports	ongoing	trend data	CRP
Semesterly reports	ongoing	trend data	Sociology department

Appendix C: Energy Implications of Bottled Water

To quantify the energy associated with all bottled water sold on campus required getting Point of Sale (POS) reports. Eddie Aguilar of Housing and Dining Services provided the quantity of sales for bottled water broken down by size and brand for all of campus in the month of February 2009. The energy associated with production, distribution, storage and subsequent disposal of bottled water sums to a sizable amount. The quantification of these associated energies requires a number of assumptions¹:

1. Density of water is 998 kg/m³
2. PET plastic weighs 38g per liter sized bottle
3. Caps weigh 2 grams each
4. Heavy Trucks use 3.5 MJ per tonne per km
5. Medium Trucks use 6.8 MJ per tonne per km
6. Cargo Ships use 15.9 MJ per tonne per km
7. Trains use 0.23 MJ per tonne per km
8. Although medium sized trucks may be used more commonly for transport through the North Coast Mountains, the assumption of inter-city heavy truck use provides a more conservative estimate.
9. One barrel of crude oil (bbl) contains 6000 MJ of energy
10. Assume refrigeration lowers temperature of one liter of water 17 degrees celsius with a specific heat of 4.2 kJ per kg per K equals 0.22 MJ per liter
11. The post-consumer PET material in California goes to Global PET Inc. located in Perris, CA (NAPCOR, 2008)
12. PET plastic requires 2 MJ per kg to recycle (Rosato, et.al., 2000)
13. 373.3 kg of CO₂ equivalent are contained in a barrel of oil (EIA, 2009; Franklin, 2007)
14. 78 school days (sale days) per academic semester

These assumptions considered in the calculations on an Excel spreadsheet (submitted with proposal) for a total of 10,090 bottles sold yields a total embedded energy of 33,000 MJ (313 therms). Based on Energy Monitoring System (EMS) data (Table XXXX) from a monitoring based commissioning (MBCx) energy study, this is enough energy to heat the Science D building on campus for 37 days, assuming 1,000 BTUs of energy are contained in a cubic foot of natural gas. This means a building can be heated longer than a water bottle drinking population can be supported. This amount of energy is contained in approximately 5.5 barrels of crude oil. If all that oil was combusted, it would release about 2,050 kg (4,510 lbs) of carbon dioxide.

¹ All assumptions from Gleick and Cooley (2009) unless specified

Table 1: Energy Data for Science D building

Summary of energy use per year			
Year	kWh	Gas volume (cu-ft)	Gas energy (therms)
2003	433,706	25,622,854	256228.5
2004	483,836	74,277,433	742774.3
2005	414,191	40,749,090	407490.9
2006	420,937	17,553,562	175535.6
2007	456,400	16,216,899	162169
2008	402,093	23,334,480	233344.8
Average	435,194	32,959,053	329590.5

Average Therms per day	902.9878
Days to run heater	36.58537

If trends for every month of school continue in the same fashion as February, 257 GJ of energy will be consumed, equating to 43 barrels of crude oil and 16,000 kg (35,300 lbs) of CO₂ in the atmosphere in a year.

If a 20% reduction in water bottle sales is achieved and tap water is consumed instead, HSU will be reducing 6,600 MJ of energy every month and offsetting 408 kg (900 lbs) of CO₂ or 51,100 MJ of energy every year, offsetting 3,202 kg (7,059 lbs) of carbon dioxide.

Major sources of uncertainty for this are the type of filtration process used for the bottled water, the mode of transportation and the type of trucks used, and the recycling location. China, is hot for the recycled American plastic and takes claim to over 40% of what we have recycled. This could add significantly more to the embedded energy (Cohen, 2007).

Appendix D: Letters of Support



Campus Recycling Program
Warren House #53
Humboldt State University
1 Harpst St
Arcata, CA 95521

March 31, 2009

Dear Humboldt Energy Independence Fund:

In order to effectively implement the "HSU Takes Back the Tap" project and campaign, the Campus Recycling Program (CRP) agrees to implement the following:

- Include the cost of Hydration Station filter replacements into the CRP Associated Students budget, and if the budget is approved, the CRP will fund the Hydration Station Filter replacements after the HEIFF funds expire.
- CRP will seek to create a coordinator position that will monitor, analyze and report on the effectiveness of the campaign.
- The new CRP position will coordinate events and responsibilities with the organizers of the "HSU Takes Back the Tap" campaign.
- CRP will support the mission and goals of the "HSU Takes Back the Tap" project and campaign.
- CRP will replace the Hydration Station filters as necessary, if the Associated Students budget is approved.

Thank you for your consideration and support,

The Campus Recycling Program Directors:

Kelly Karaba
Office Manager

Handwritten signature of Kelly Karaba in black ink.

Luke Armbruster
Director of Compost

Handwritten signature of Luke Armbruster in black ink.

Austin Rasmusson
Director of Education

Handwritten signature of Austin Rasmusson in black ink.

Sarah Niznik
Director of ROSE

Handwritten signature of Sarah Niznik in black ink.

From: "Gail Wootan" <Gail.Wootan@humboldt.edu>
To: "Gabriel Salazar" <gs62@humboldt.edu>
Sent: Monday, March 30, 2009 2:15:25 PM GMT -08:00 US/Canada Pacific
Subject: Re: HSU Takes Back The Tap

Hi Gabriel:

Your organization sounds pretty cool, and I'd be happy to support you through HOP. As far as the actual communication method is concerned, I need a little more time to think about it and decide where best your message should be presented. I do like the idea of a video as part of the PowerPoint--I would prefer 30 seconds rather than 90.

As I believe Kady mentioned, you can also put a flier in the info folder that all students receive if we decide that we decide not to go with the video.

Finally, we will have the majority of transfers go through our online orientation, which means they won't get the same information the on-campus students will receive. Those students will start going through orientation on April 20, so if you have a website or PDF I can link them to, I will try to get your information into the curriculum.

Does this response help with your proposal, or do you need more information?

Best,

Gail Wootan
Associate Director of Student Life
Humboldt State University
1 Harpst Street
Arcata, CA 95521
gmw13@humboldt.edu
phone: 707.826.3507
fax: 707.826.5697

<http://studentaffairs.humboldt.edu/hop>

Appendix E: Water Quality Assessment of the Mad River Watershed

Humboldt County is currently serviced with municipal water from the groundwater source in the Mad River Basin at Essex in Blue Lake. This serves water to seven municipalities which contain approximately 60% of the population (78,688 people) of Humboldt County (Winzler & Kelly, 2006). The capacity of the groundwater basin is 48,030 acre-ft with an area of approximately 121 square-miles that consists of runoff from the upper quarter of the Mad River Basin. This constitutes only 8% of the total runoff from the entire watershed. Only about 3% of the total annual average runoff is pumped at a rate of 25-30 MGD (28,000 to 34,000 acre-ft) at Essex in Blue Lake to be used for the seven municipalities and one industrial business (Evergreen Pulp Inc.). The reservoir receives 70 inches of rain per year on average and is not drawn down each year (HBMWD, 2009).

The water supply is pumped at depths of 60-90 feet from sand and gravel beds that provide natural filtration. Next the water is treated in the summer only by chlorination for sterilization and in the winter additional treatment for turbidity (cloudiness) is enacted. Although turbidity is not a health concern, the Department of Health Services (DHS) believes that it may interfere with the disinfection process. Finally the water is sent to, and through, two storage tanks before it is routed to the seven municipalities. The water quality was last tested in 2006 by 324 samples for over 100 contaminants. The results indicate that the "water quality is very high, as has consistently been the case in past years" (HBMWD, 2006). For the complete consumer confidence report see Google.

All of the above information means that Humboldt County is in no worry of running out of its own water. This is a sustainable enterprise that makes the use of imported, bottled water unnecessary.

Appendix F: Tap the Mad Brochure



Mad River Water System

THE HBMD'S MAD RIVER WATER SYSTEM IS **SUSTAINABLE** AND **ENVIRONMENTALLY BENEFICIAL** (FISH FRIENDLY). SITUATED IN THE UPPER

WATERSHED WHERE SALMON NATURALLY CANNOT REACH, **OUR DRINKING**

WATER FIRST PROVIDES RECREATIONAL OPPORTUNITIES AT RUTH RESERVOIR, WATER ON RELEASE FROM RUTH, VIA GRAVITY, PRODUCES

EMISSION FREE ELECTRICITY. WATER FLOWS OVER 75 MILES

DOWNRIVER, **SUPPORTING RIPARIAN AND AQUATIC HABITATS** AND

THREATENED POPULATIONS OF SALMON AND STEELHEAD. ON

REACHING THE ESSEX NARROWS, WATER PERCOLATES THROUGH THE

GRAVEL BED FORMING AN AQUIFER WHERE IT IS PUMPED FROM NEARLY

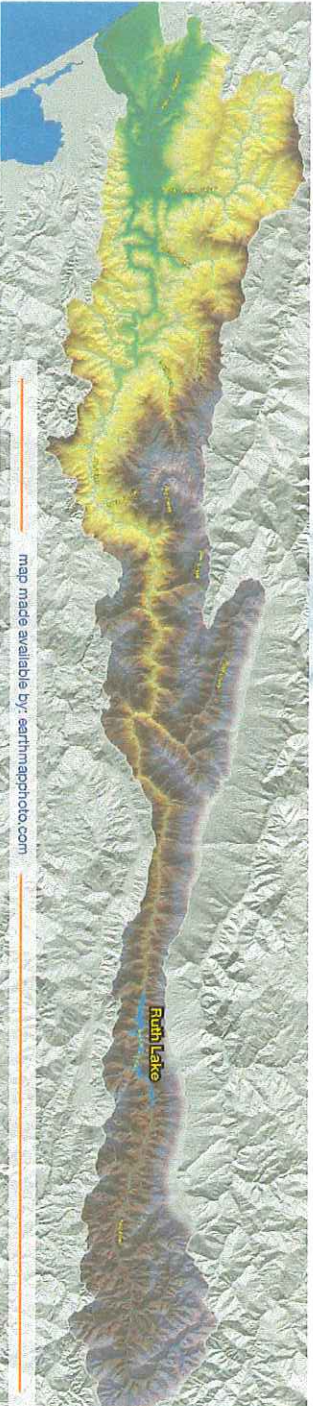
A HUNDRED FEET BELOW UP TO A RIDGE FOR TREATMENT. THEN, VIA

GRAVITY, IT FLOWS ONWARD TO ARCATA. **THE PEOPLE AND BUSINESSES**

SERVED BY THE HBMD HAVE AND CONTINUE TO INVEST MILLIONS OF

DOLLARS INTO OUR REGIONAL WATER SYSTEM: **WE ALREADY PAY FOR**

HIGH QUALITY WATER IN OUR TAPS. WHY PAY AGAIN FOR BOTTLED WATER?



References:

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Gleick, P.H. and Cooley, H.S. (2009) Energy implications of Bottles Water, Environmental Research Letters, 4, 6 pp

HBMWD (2009) "Water Supply," accessed 3/5/09 online at www.hbmwd.com/water_supply

NAPCOR (2008) Post Consumer PET Plastic Reclaimers, accessed 3/28/09 from www.napcor.com/plastic/bottles/reclaimers.html

Rosato, D.V., Rosato M. and Rosato, D. (2000) Concise Encyclopedia of Plastics, Kluker Academic Publishers, Norwell, MA. Pg 461

Winzler and Kelly (2006) Humboldt Bay Municipal Water District Groundwater Management Plan, Prepared for HBMWD.

Appendix 2 (Addendum #1 for HEIF Grant)

Contingency Plan for Filter Funding

The Campus Recycling Program (CRP) has committed to include the cost of Hydration Station filter replacement as necessary. Filters are useful for up to 2,000 gallons of water used. Estimates are that if the hydration station is used to fill 20-50 one liter bottles per day, filters will need to be replaced every 377-151 days. A semester is approximately 105 days long, including weekends and only 75 business days. Therefore, every semester is a good estimate for replacement frequency.

Since, the HEIF grant includes the costs of two years worth of replacement filters for three stations (12 filters = \$504), CRP will not have to have funds available until 2011. If, at that time, CRP does not have their funding from AS, but the stations have been a success (measured by reduced disposable water bottle sales and a student survey of interest in the hydration stations), fund raising for replacement filters via the Take Back the Tap Campaign, will not be difficult. The campaign is committed to fundraising in order to provide additional filters. The campaign will only have to raise \$150 per semester, which was easily accomplished at the SLAM Fest this past weekend alone.

As part of the contingency plan for filter replacement, one of the goals of the Take Back the Tap campaign is to encourage the Administration to take responsibility for future filter replacement costs. HSU President, Rollin Richmond, has made a well known commitment to sustainability and environmental responsibility,² and he openly recognizes that “student-powered champions” for sustainability are the hallmark of the university. If the Administration takes responsibility for the replacement filter costs, they can effectively prove their commitment to the efforts of the students towards making the campus more sustainable. In order to accomplish this goal, the campaign will make presentations to the Administration every semester about the progress of the campaign, will submit quantifiable data that shows the effective reduction of bottled water use and sale on campus, thereby making the campus more sustainable and will demonstrate to the Administration proof of student support for the Hydration Stations. The data will be gathered from the monitoring program established in the grant proposal.

² From “Sustainability in Mind: Our Commitment” www.humboldt.edu/green/commitment/

Project Title

HSU: Takes Back the Tap

Awardee Implemented Project Budget

Category (list major items)	Unit (e.g. miles, each, etc.)	Cost per unit	Total cost	Amount requested from HEIF	Matching contribution to be provided by applicant or other source	Who/what is the other source?	Is the matchi contrib confirm potenti
Durable equipment							
Hydration Stations	3	1575	4725				
Misc. Materials	1	575	575				
Consumable supplies							
Replacement Filters	12	42	504				
Video equipment/Props	1	2000	2000				
Wages for student participants							
Videographers	3	300	900				
Professional services							
Plumbers	18	56.44	1015.92				
Carpenters	16	49.79	796.64				
Electricians	10	52.62	526.2				
Total			2338.76				
Travel							
Other							
Contingency Cost	15%	of 2,914.00	437				
TOTAL:			11479.76				

April 22, 2009

Humboldt Energy Independence Fund Committee
Humboldt State University
1 Harpst St
Arcata, CA 95521

Dear Committee Members:

Please register the HSU Dining Services' support for the installation of a "Hydration Station" in the Depot. The Hydration Station will provide a healthy alternative to bottled water for students, faculty and staff. We are supportive of the goals of the student-led campaign HSU Takes Back the Tap, and are looking forward to having easy access to filtered water in our building.

Sincerely,



Ron Rudebock

Director HSU Dining Services



HSU Dining Services

Jolly Giant Commons
355 Granite Ave
Arcata, CA 95521
Office: 707-826-3541
Fax: 707-826-5315
Email: rlr4@humboldt.edu

Humboldt Energy Independence Fund
Humboldt State University
1 Harpst St
Arcata, CA 95521

Humboldt Energy Independence Fund Committee:

We at the Athletics Department, support the installation of a "Hydration Station" in the Kinesiology Building's lower floor. The Hydration Station will provide a healthy alternative to bottled water for students, athletes, event spectators and building faculty and staff. We are supportive of the goals of the student-led campaign HSU Takes Back the Tap, and are looking forward to having easy access to filtered water in our building.

Sincerely,

Dan Collen
Director of Athletics

April 23, 2009

Humboldt Energy Independence Fund Committee
Humboldt State University
1 Harpst St
Arcata, CA 95521

Dear Committee Members:

Please register the Natural Resources Department's support for the installation of a "Hydration Station" in the Natural Resources Building on the lower floor. The Hydration Station will provide a healthy alternative to bottled water for students, faculty and staff. We are supportive of the goals of the student-led campaign HSU Takes Back the Tap, and are looking forward to having easy access to filtered water in our building.

Sincerely,

Dr. Steven Martin
Director of Natural Resources Department

Appendix 2 (Addendum # 2 to HEIF Committee)

May 6, 2009

Humboldt State University
Humboldt Energy Independence Committee
1 Harpst St
Arcata, CA 95521

Dear Committee Members:

In order for us, at Humboldt State, to reduce bottled water consumption we need to address the reasons why people drink bottled water in the first place. People choose to drink bottled water because they have the perception that municipal tap water is impure or tastes bad, because it is convenient, because of perceived health benefits, and/or because they have been influenced by advertisements from the bottled water manufacturers.

We need to focus on education and outreach to help address the reasons why people drink bottled water, we need to promote drinking our local tap water from refillable containers and we need to improve access to tap water. Improving access to tap water includes increasing the ability of students, faculty and staff to easily refill containers and making tap water more appealing to bottled water drinkers. To encourage bottled water drinkers to switch to tap water, we need to provide water that is as aesthetically appealing as bottled water and dispensed a manner that helps overcome their negative perceptions of tap water.

I am asking to fund the purchase and installation of three Hydration Stations around campus. These stations will help to reduce bottled water consumption because they increase the accessibility of tap water to students, faculty and staff, they remove aesthetic impurities (chlorine and particulates from the pipe system) that many people object to, they help to overcome people's negative perception of tap water because the water is dispensed in a hygienic and aesthetically appealing manner and they look cool—people will want to use them.

I am attaching additional supportive materials with this final addendum including a letter from the Berkeley University Health Services Manager, a press release written on the Berkeley installation of two Hydration Stations, a link to the Hydration Station Advertisement on YouTube, and student signatures of campaign support and for the install of the Hydration Stations.

Please make the decision to fund the installation of Hydration Stations on Humboldt State's campus.

Sincerely,

Natalynne DeLapp

Director of HSU Takes Back the Tap

May, 5 2009

Humboldt Energy Independence Fund Committee
Humboldt State University
1 Harpst St
Arcata, CA 95521

Dear Committee Members:

I would like to tell you about our experience at UC Berkeley with *the I Heart Tap Water* campaign—a collaborative campaign between Cal Dining, Environment, Health & Safety, Recreational Sports and University Health Services to promote tap water as a beverage of choice and improve accessibility to tap water for refilling water bottles.

The *I Heart Tap Water* campaign began in Fall 2008 focusing on education and outreach. A 2007 survey of Berkeley students that found 60% felt that the campus lacks sources for refilling reusable water containers. In March of 2009, we installed two Hydration Stations. The installation of the Hydration Stations contributes to improving access to tap water, while reducing the use of plastic drinking water bottles.

We believe to promote health and sustainability, we need to improve campus accessibility to tap water and promote water as a beverage of choice to reduce consumption of caloric beverages. Since the campaign began, we have seen an estimated 8% reduction in bottled water sales. We expect that at minimum, we will be able to show a continued downward trend over time in both waste and in purchasing measures.

Please feel free to contact me for additional information or questions.



Trish Ratto, RD
Manager, Health*Matters
Chair, UC Berkeley Nutrition and Physical Activity Work Group

University Health Services
2222 Bancroft Way
Berkeley, CA 94720-4300
(510) 642-7324

Appendix 4 Resolution

Resolution in support of the drinking and utilization of local water and the phasing out of the sale of single-use water bottles at Humboldt State University (HSU)

- 1.) **WHEREAS**, The Mission Statement of the Associated Students of Humboldt State University states that they "[shall be] an official voice through which students' opinions may be expressed; foster awareness of these opinions both on and off campus; provide services and programs as deemed necessary by the corporation to meet the needs of the student and campus community; and to stimulate the educational, social, physical, and cultural well-being of the University community;" and
- 2.) **WHEREAS**, Humboldt State and the Associated Students has had a long history of advocating environmental and sustainable responsibility; and
- 3.) **WHEREAS**, The HSU Strategic Plan states that its vision for the future is to "provide a socially and environmentally responsible education;" and,
- 4.) **WHEREAS**, HSU has repeatedly stated its commitment to a sustainable campus and the reduction, reuse, and recycling of natural resource-based products; and
- 5.) **WHEREAS**, HSU consumes more than 78,000 single-use water bottles per year; and,
- 6.) **WHEREAS**, the production, transportation, storage and disposal of bottled water to meet HSU bottled water demand requires approximately 43 barrels of oil per academic year; HSU contributed approximately 35,300 pounds of CO₂ being released into the atmosphere; and,
- 8.) **WHEREAS**, the City of Arcata found that the Arcata water system, through Humboldt Bay Municipal Water District's Mad River, is sustainable and environmentally beneficial (fish friendly and nearly carbon neutral); situated in the upper watershed where salmon naturally cannot reach, Arcata's drinking water is released from Ruth reservoir via gravity, produces emission-free electricity; as the water flows over 75 miles downriver, it supports riparian and aquatic habitats and threatened populations of salmon and steelhead; upon reaching the Essex Narrows, water percolates through the gravel bed forming aquifer where it is pumped from nearly a hundred feet below the surface up to a ridge for disinfection, and again via gravity, flows onward to the City's distribution system; and
- 9.) **WHEREAS**, Universities and colleges around the country including Chico State, UC Berkeley, Sarah Lawrence, Vassar, Smith College, Washington University, Oregon State and many others have already made efforts as a campus to curb their bottled water use; therefore, be it
- 10.) **RESOLVED**, that Associated Students will strongly discourage the use of AS funds to purchase single-serving bottles of water, be it further

11.) **RESOLVED**, that the Associated Students will encourage the utilization of refillable containers at its facilities and functions, be it further

12.) **RESOLVED**, that Associated Students will support efforts to educate the public regarding the value and benefits of using Arcata's unique water system for all its water needs, be it further

13.) **RESOLVED**, that Associated Students will support the phasing-out of the sale of single-use plastic water bottles on campus, be it finally

14.) **RESOLVED**, that this resolution shall be sent to, but not limited to: HSU President, Rollin Richmond; Vice President of Student Affairs, Dr. Steven Butler; HSU Housing and Dining Director, Ron Rudebock, University Center Board of Directors, all CSU Associated Students; the Arcata City Council; Humboldt Bay Municipal Water District; the Food and Water Watch; and all local and state media outlets.

Rachel Cooke

Kale Roberts

Nightsnow Vogt

AS Representative

AS Representative

AS Representative

Appendix 5 Article for ECONEWS!

HSU Takes Back the Tap

By Natalynne DeLapp

Concerned with climate change, student health and unprecedented levels of ocean pollution, local students are launching a campaign to encourage the consumption of local drinking water and the usage of refillable containers.

Students from HSU's Environmental Science Practicum class have commenced a new educational campaign called *HSU Takes Back the Tap*. The goal is to reduce negative environmental impacts associated with bottled water. To accomplish this goal, they are educating students and faculty about the environmental and health costs associated with plastic water bottles. They are working on passing a resolution to support phasing out the sale of single-use water bottles through the Associated Student's government.

Additionally, they are writing a grant to the Humboldt Energy Independence Fund (HEIF) in order to provide an alternative to bottled water. If approved, the grant will fund the retrofit and replacement of existing water fountains on campus with filtration systems and goosenecks for convenient refilling of reusable drinking containers. "I really don't like the taste of chlorine in the drinking water; if the drinking fountains were equipped with filters I would not hesitate to take advantage of them," said Laurel Hoffman, HSU student.

HSU Takes Back the Tap is partnering with the Food and Water Watch's national campaign *Take Back the Tap*, the Humboldt Bay Municipal Water District and City of Arcata's local campaign *Tap the Mad*, along with the HSU Campus Recycling Program and the HEIF, both student organizations.

"We are really hopeful that the coalition we are establishing will help to usher in the cultural shift necessary to accomplish the goal of the campaign not just on campus but ultimately in our community, and the rest of the nation," said Beth Oates student member of HSU Takes Back the Tap.

The many problems associated with single-use plastic water bottles include embedded energy costs of water bottle production and transportation, the life span of plastic and how it is disposed of, and the potential health risks of plastics.

Bottled water is sold in containers made from *polyethylene terephthalate* (PET) resin. Producing the PET bottles to meet global bottled water demand requires approximately 50 million barrels of oil per year. This includes both the PET material and the energy required to turn PET into bottles. The Pacific Institute found that the production of bottled water requires as much as 2000 times the energy cost of producing tap water.

In his paper *Economics and Climate Impact of Bottled Water at Humboldt State University*, HSU student Jeff Steuben, estimated that HSU sells about 33,150 bottles of water

each semester, and this results in 2,354 pounds of carbon dioxide being emitted from trucking. The manufacture and transportation of PET plastic uses large amounts of energy and resources and generates greenhouse gas emissions that contribute to global warming.

The students are motivated in their effort by further statistics on plastic bottles and their negative effects on the environment. The Food and Water Watch estimates that less than 14 percent of single-use water bottles are recycled; and they are often incinerated, releasing toxic chemicals into the air or disposed of in the ocean where the plastic is broken down into smaller and smaller pieces. Plastics can take thousands of years to decompose when disposed of in landfills.

In 2001, in the *Marine Pollution Bulletin*, reported that six pounds of plastic are floating in the North Pacific subtropical gyre for every pound of naturally occurring zooplankton. Marine animals mistakenly consume plastics instead of food, often leading to starvation or the buildup of toxic chemicals within the ocean food chain which impacts both wildlife and human health. Other studies have shown that plastics can leach carcinogenic chemicals into bottled water where they can be directly absorbed by the consumer.

“We are determined to provide students with free, safe drinking water and to stem the flow of dangerous plastics through HSU into our environment,” said Oates. “Let’s stop polluting our planet by drinking local water.”

Appendix 6 Press Release

April 28, 2009

Press Release for HSU Takes Back the Tap

Students from HSU's Environmental Science Practicum class have commenced a new educational campaign called *HSU Takes Back the Tap*. The mission of HSU Takes Back the Tap is to reduce bottled water consumption on campus, in order to decrease the negative environmental and social impacts associated with bottled water. To accomplish their goal, they are spreading campus awareness through outreach, events, and creating interpretive messages.

The students wrote an Associated Students resolution to support of the drinking and utilization of local water and the phasing out of the sale of single-use water bottles at Humboldt State University. On April 27th the AS Representatives unanimously passed the resolution.

Additionally, students wrote a grant to the Humboldt Energy Independence Fund (HEIF) to fund two projects, a series of short educational films and the installation of three "Hydration Stations" around campus. HEIF funded the short films and the Hydration Stations are pending funding until addendum items are submitted.

The short films are a student-implemented project with the goal of creating short (less than one minute) entertaining and informative videos that will draw the viewer's attention to the energy embedded in every bottle of water they purchase and reduce negative stigmas related to local tap water.

The "Hydration Stations" are touch-free, hygienic, state-of-the-art, filtered drinking water dispensers (see attached picture). The Hydration Stations provide an alternative to bottled water, while promoting the goals of the project. While the water quality at HSU is known to be very high, often the aesthetic qualities of the water from individual drinking fountains is less than desirable, this is mainly due to erosion of pipes or leaks. Installing Hydration Stations will provide students and faculty with access to convenient, filtered water on campus and may reduce reliance on bottled water. If funded the Hydration Stations would be installed in the Depot, the Natural Resources Building and the Kinesiology Building. "I really don't like the taste of chlorine in the drinking water; if filtered water was available I would not hesitate to take advantage of it," said Laurel Hoffman, HSU student.

"We had a successful conversation with Ron Rudebock, the Director of HSU Housing and Dining Services, and Dan Cullen, the Director of the Athletics Department. Both are very supportive of the campaign mission and the installation of the Hydration Station on campus," said Natalynne DeLapp, Co-Director of HSU Takes Back the Tap.

HSU Takes Back the Tap is creating a partnership with the Campus Recycling Program. "It seems like a natural partnership since both organizations are concerned with reducing the campus' waste stream and collaboration will only help strengthen the mission," said DeLapp

"We are really hopeful that the coalition we are establishing will help to usher in the cultural shift necessary to accomplish the goal of the campaign not just on campus but ultimately in our community, and the rest of the nation," said Amanda Platt, Co-director of HSU Takes Back the Tap.

Appendix 7 Persuasive Speech

Natalynne DeLapp

HSU, Takes Back the Tap!

As students many of us consume steady streams of coffee, and alcohol, but we must also remember to drink water. We need water to flush our bodies and keep ourselves healthy; water is good for us and is crucial for our survival. Bottled water is not. Bottled water companies have spent millions of dollars marketing their products as pure, safe, healthy, refreshing, and even “green”—all things that appeal to the emotions of consumers. This is an industry that takes a free liquid that falls from the sky and sells it for as much as four times what we pay for gas.

My name is Natalynne DeLapp and I am organizing the campus campaign “HSU Takes Back the Tap.” The goal of this student run campaign is to reduce the negative environmental impacts from bottled water by encouraging reusable drinking containers and the use of local tap water.

Today I am going to talk about the problems with bottled water, talk about why people drink bottled water and finally give you some alternatives to bottled water.

The problems with bottled water:

- The production and transportation of plastic water bottles uses large amounts of energy and resources—generating greenhouse gas emissions and contributing to global warming.
- Producing the PET bottles to meet global bottled water demand requires approximately 50 million barrels of oil per year.
- The Pacific Institute found that the production of bottled water requires as much as 2000 times the energy cost of producing tap water
- An HSU student estimated that more than 70,000 water bottles are sold on campus—resulting in more than 5,000 pounds of carbon dioxide generated in trucking water to our campus.
- Most people drink bottled water “on the go,” which decreases the odds that the bottles are recycled. The Food and Water Watch found that less than 14% of empty plastic water bottles are recycled.
- Plastic does not decompose, it is often incinerated (releasing toxic chemicals), buried in landfills or it ends up in the ocean.
- Pacific Gyre (6 pounds of plastic for 1 pound of zooplankton)
- Animals mistakenly consume plastic leading to starvation or assimilation.
- When we eat seafood we may be indirectly ingesting toxic plastic chemicals—with unknown consequences.
- Plastic bottles can leach toxic and carcinogenic chemicals into the water, including BPA, an endocrine disrupting chemical that mimics estrogen.

So why do we drink bottled water? When asked most people give the following reasons: convenience, safety and taste. Now, what I'd like to do is counter these arguments with some of my own and in the process, hopefully persuade you to stop using disposable water bottles.

1. People say that bottled water is convenient
 - I say, it can be equally convenient to carry a refillable container, whenever it is empty you can refill it at any tap for free **and** you do not need to find a way to dispose of it.
2. People say that bottled water is safer than tap water
 - In the U.S., public water is regulated by the EPA, which requires multiple daily tests for bacteria and other impurities. The results available to the public. The Food and Drug Administration, which regulates bottled water, only requires weekly testing and does not share its findings with the EPA or the public.
 - Studies have shown bottled water to contain a wide range of pollutants.
 - Most bottled water *IS* tap water simply repackaged and sold for up to 4000 times more than the cost of tap water.
3. People say that bottled water tastes better.
 - Well, have you ever drank bottled water that has been sitting in a hot car? We all know, it can start to taste like plastic.
 - In blind taste tests people like tap water
 - Here in Arcata, our local tap water is great! It is exceptionally clean and it tastes good too.

So, now that I've told the problems with plastic bottles, and countered some common myths, what do I want you to do? I want you to stop buying disposable water bottles.

Use refillable drinking containers. Drink our local tap water. If you are concerned with taste or quality get an inexpensive water filter, like a Brita. Fill a pitcher with tap water and then let it sit for 12-24 hours to let the chlorine evaporate.

I want you to tell the university administration that you support the phase-out of bottled water on campus.

And, if you would like to help with this campaign please contact us at TapthatHSU@gmail.com

REMEMEBER:

Water is healthy. Bottled water is NOT.

Don't let the marketing ads fool you.

Stop polluting yourself and the environment.

And Drink local water.

Appendix 8 Radio Ad

Elle Metz, Jocelyn Orr, Mitra Abidi, & Natalynne DeLapp

With tap water, you know what you are drinking.

In Humboldt County we have exceptional water.

Do not be fooled by a pretty label, plastic can poison your water.
Bottled water has no guarantees.

Why spend your money on something you can't be sure of?

Here in Humboldt county when you turn on the faucet,
you don't have to worry.

With tap water you know what you are drinking.

Appendix 9 Graphic Images

DO NOT BE FOOLED

BY A PRETTY LABEL

Plastic Can Poison Your Water

With Tap Water, You Know What You Are Getting

The government strictly regulates tap water safety standards. Surprisingly, the contents of seemingly "pure" bottled water does not have to meet the same standards.

Here in Humboldt County we have exceptional water so when you turn on the faucet you do not have to worry.

Bottled Water Is Expensive

Not only does plastic have health and environmental costs, but bottled water can cost up to \$10 per gallon. That is four times the price of gasoline. No one wants to spend money on something they cannot be sure of.

Reusable Bottles are Better

Plastic leaches toxins. Carrying a glass or stainless steel reusable bottle is safer. Since it is a one-time purchase, you save money in the long run. An additional benefit is that your bottle can easily be refilled anywhere, anytime.

If you would like to learn about the connection between bottled water and your environment please visit:

takebackthetap.org

Brought to you by HSU Takes Back the Tap



**PLASTIC BOTTLES = POLLUTION.
DRINK LOCAL WATER.**

HSU TAKES BACK THE TAP

