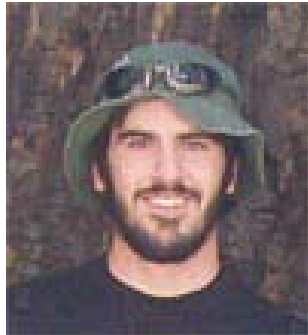


# Overview

Bottled Water Alternatives, University Edition

October 29, 2009



Phillip Kobernick

RPN Fellow

[phillip@newdream.org](mailto:phillip@newdream.org)

# Outline

- ▶ Environmental costs
- ▶ Best practices
- ▶ Bottled water alternatives
- ▶ Concerns for universities

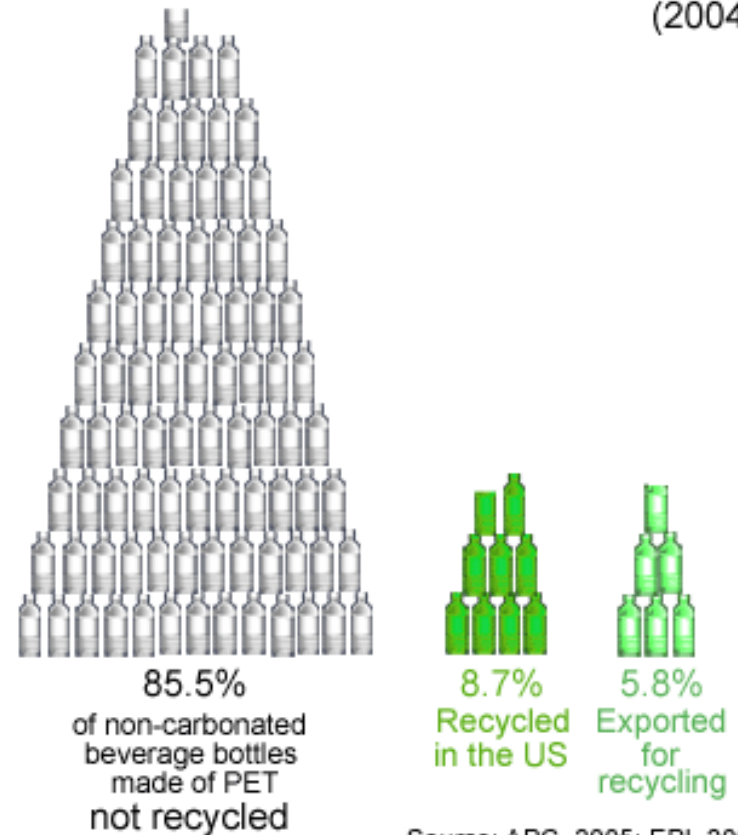
# Environmental Costs

## End of life Management:

- Low recycling rates
- “Down –cycling”



Figure 1: Percentage of Plastic Bottles Recycled (2004)



Source: APC, 2005; EPI, 2006

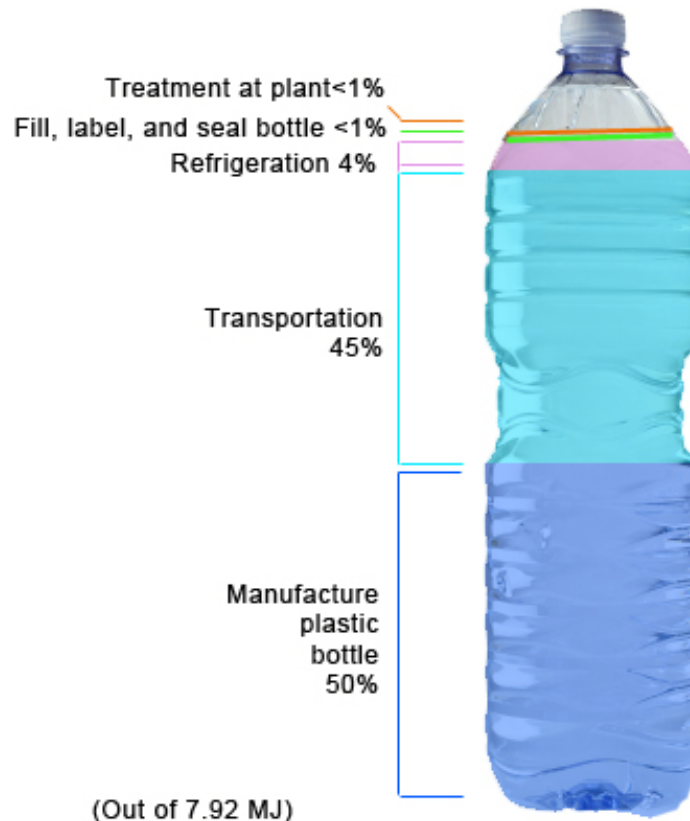
# Environmental Costs

## Waste:

- Energy & Transportation
- Water
- Petroleum



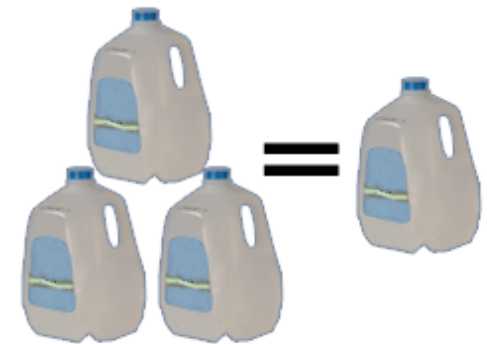
Figure 1:  
Energy Required to Make Bottled Water



Pacific Institute, 2009

Figure 2:

For each gallon that goes into bottles, two additional gallons are used in the purification process.



Source: UCS, 2007

# Health Concerns

## Water quality:

- Bottled water – FDA, Tap water – EPA
- The FDA's authority to enforce quality is weaker (GAO, 2009)
- NRDC study found contaminants in 1/3 of bottled water brands (including E. coli and arsenic)
- Rebranded tap water

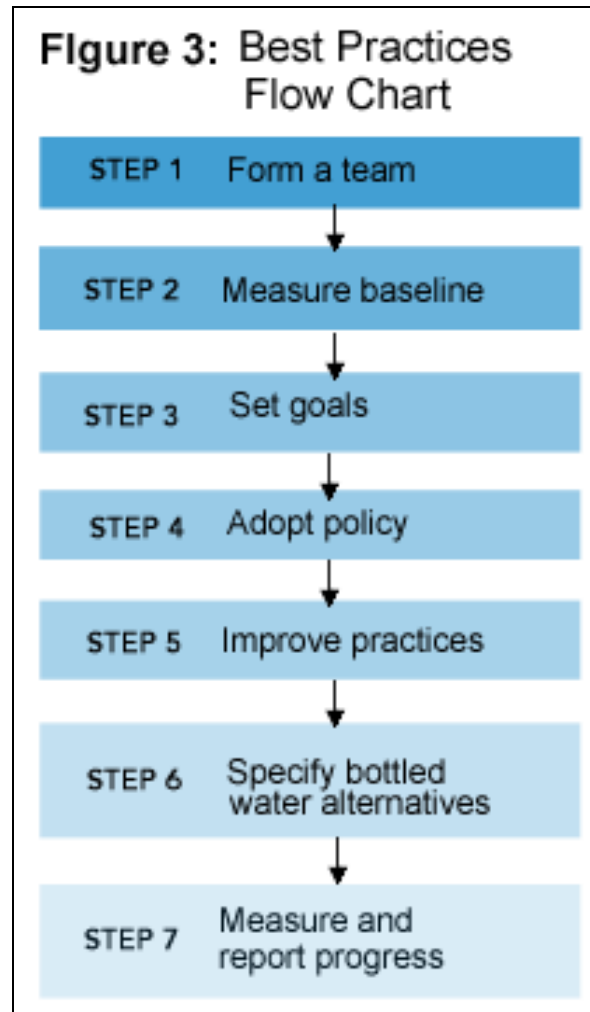


## Plastics:

- Chemical leaching
- Bacteria



# Best Practices

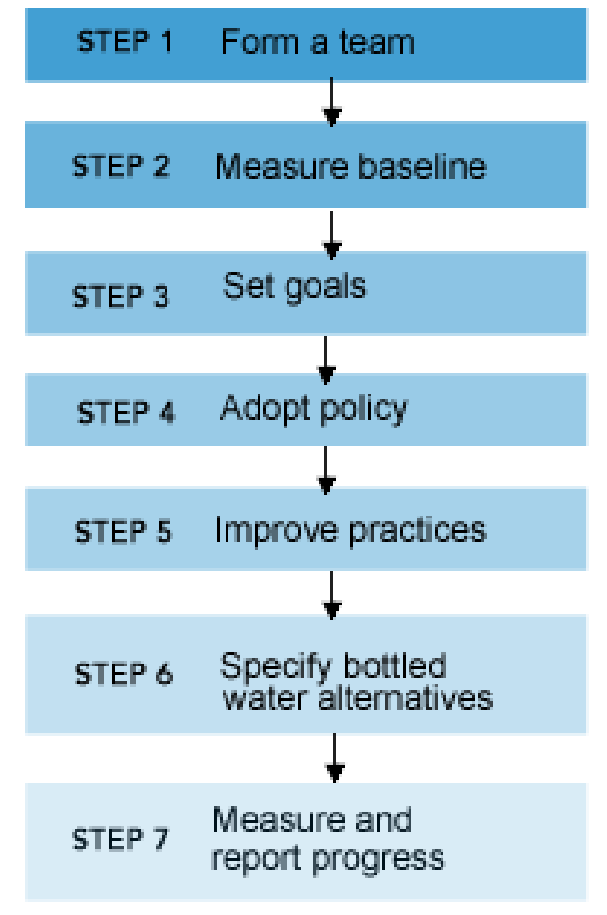


# Best Practices

## Bottled water team:

- Executives and Senior Administration
- Sustainability Committee
- Environmental Health and Safety
- Procurement
- Facilities Management
- Events & Conferences, Catering & Dining, Retail & Other University Stores
- Students & Faculty

**Figure 3: Best Practices Flow Chart**



[Overview](#)[Social & Environmental](#)[Best Practices](#)[Cost, Quality, & Supply](#)[Policies](#)[Specifications](#)[Standards](#)[Products](#)[Calculator](#) »[Handy Facts](#)[Definitions](#)[Credits & Endnotes](#)[Addenda](#)[Webinars](#)

### Personal Links

Logged in as:  
Phillip Kobernick

[Profile](#)[Contact Preferences](#)[Edit Login](#)

Member Status:  
Current

[Log out](#)[Download this Guide](#)

## Bottled Water: Calculator

This Bottled Water Calculator, developed by RPN, compares the cost and environmental impacts of 16.9 oz. bottles of water with tap water. Results are expressed in gallons of water, mega joules of energy, gallons of oil, pounds of CO<sub>2</sub>e, and dollars saved.

Edit the values below and click update.

### How much water do you drink?

Enter the total number of 16.9 oz. bottles of water purchased by your organization in a year:

Cost of Tap Water per Gallon (\$ per gallon):

(If you know your local cost, please enter - otherwise leave the national average.)

Cost of 16.9 oz Bottle of Water (typical is \$1.50):

### Impact

Total Water Drank:	1,563	gallons
Extra Water Required for Production and Purification:	3,125	gallons
Energy Required for Manufacturing:	1,006	megajoules
Oil Required to Produce the Plastic Bottle(s):	248	gallons
CO <sub>2</sub> e to Manufacture Plastic Bottle(s):	1,875	pounds

**Your Extra Cost for Bottled Water:**

**\$14,980.00**



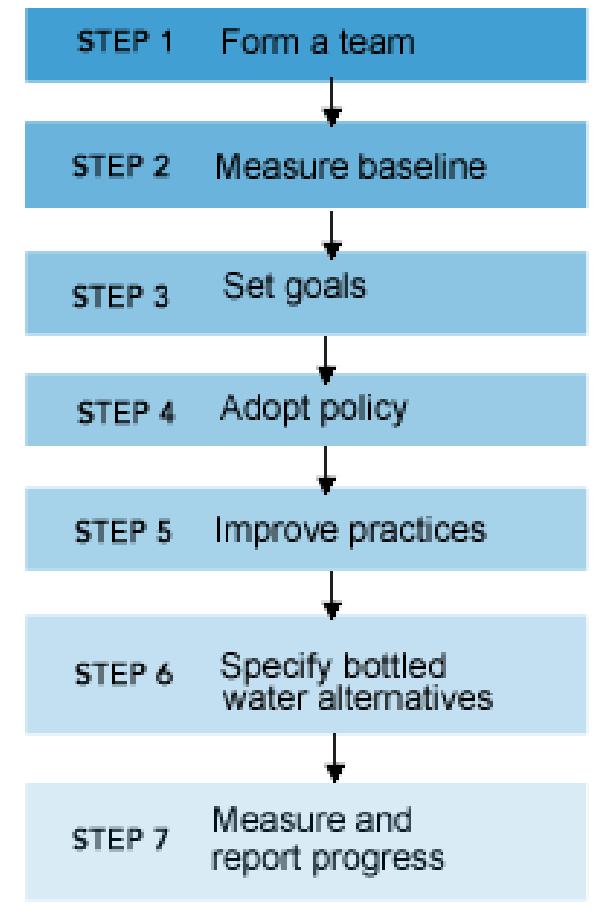


# Best Practices

## Bottled water team:

- Executives and Senior Administration
- Sustainability Committee
- Environmental Health and Safety
- Procurement
- Facilities Management
- Events & Conferences, Catering & Dining, Retail & Other University Stores
- Students & Faculty

**Figure 3: Best Practices Flow Chart**

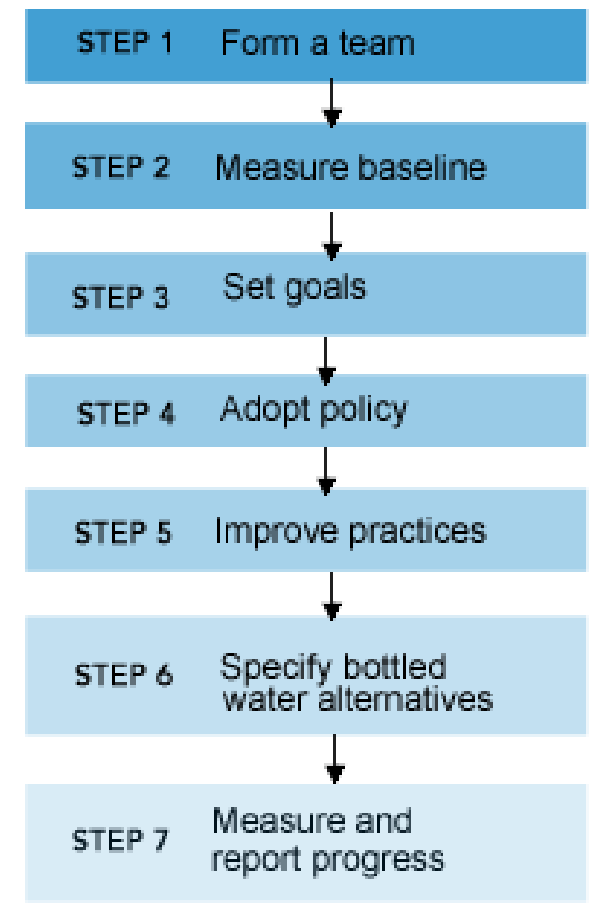


# Best Practices

## Improve Practices:

- Maintain/upgrade existing water infrastructure
- Replace bottled water at events and conferences
- Plan for emergency situations

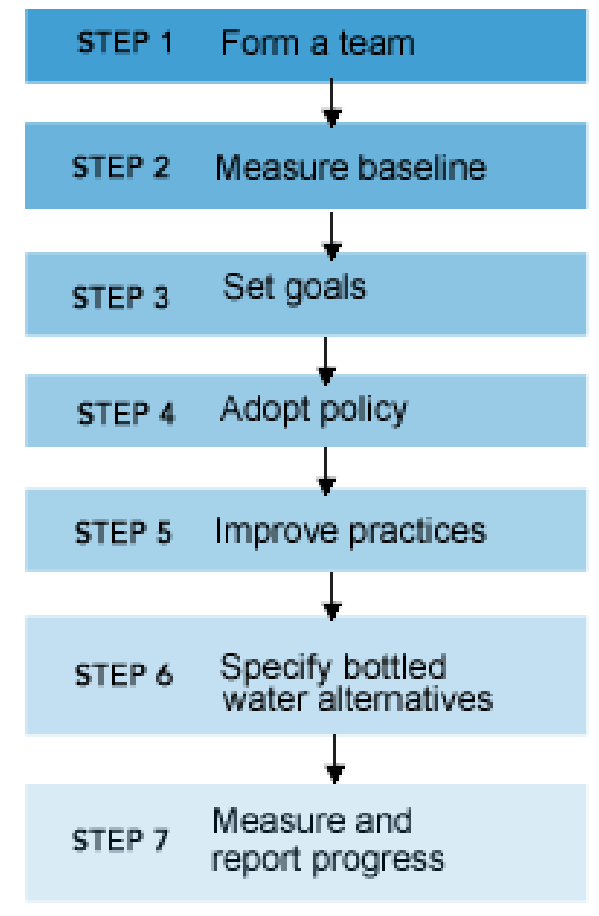
**Figure 3: Best Practices Flow Chart**



# Alternatives

1. Filters
2. Fountains
3. Coolers
4. Reusable bottles

**Figure 3: Best Practices Flow Chart**



# Alternatives

## Filters

### Pro:

- Low cost and wide availability
- Suitability to wide range of needs
- Removal of contaminants in water system

### Con:

- Not 100% effective
- Sometimes costly
- Performance and aesthetics
- End of life management

For a searchable database of over 2,000 National Sanitation Foundation (NSF) certified filters, visit the

[RPN website](#)



# Alternatives

## Bottle-less coolers

### Pro:

- Decreased maintenance and cleaning
- No plastic bottles
- No need to transport water
- Unlimited supply of cheap tap water
- Use less energy, save money

### Con:

- Can be more difficult to maintain
- Many filters can not be recycled



# Alternatives

## Fountains

- Insulate piping
- Use a timer to turn off refrigeration (but for no more than eight hours)

Cost of Bottled Water	Cost of Drinking Fountains	Savings over 5 Years
<b>\$655,755</b> (5 year contract)	<b>\$419,000 - \$639,000</b> (Installation in year 1 and yearly maintenance costs for 4 years)	<b>\$16,755 - \$236,755</b>



Example of a water fountain at the University of Winnipeg that has been upgraded to include a spigot for use with reusable bottles.

# Alternatives

## Reusable bottles

### Metal



- Cheap, durable, sometimes recyclable
- Can be bad for hot liquids

### Plastic



- Very cheap, common, durable
- Chemical concerns (BPA)

### Glass and Ceramic



- Cheap, can be reused.
- Fragile, not effective for institutions

# Concerns

## What about BPA in polycarbonate bottles?

- Endocrine disruptor
- Interferes with reproductive hormones
- “Increased prevalence of cardiovascular disease, diabetes and liver-enzyme disease (JAMA, 2008)
- Detected in about 90% of population



[The FDA insists] “products containing BPA currently on the market are safe and that exposure levels to BPA from food contact materials, including for infants and children, are below those that may cause health effects” (FDA, 2009).





# Concerns

My college has a beverage exclusivity contract...

- Guaranteed exclusive market free of competitors
- Long term agreement (5, 10 years, etc.)
- Financial incentives such as scholarships or other contributions to the university
- Preferred pricing
- Minimum sales requirements
- Possible compensation if the university breaks its contract

But, it depends...

# Concerns

Won't this cost money?

**A**

-

**B**

=

**\$???**

- |  |  |   |
|--|--|---|
| <ul style="list-style-type: none"> <li>• Bottled water giveaways (administrative use, catering, tours, concerts, etc.)</li> <li>• Power cost from bottled water only vending machines</li> </ul> | <ul style="list-style-type: none"> <li>• Bottled water sales (retails stores and vending machines, net profit)</li> <li>• Potential infrastructure upgrades and upkeep</li> <li>• Beverage exclusivity contracts*</li> </ul> | <ul style="list-style-type: none"> <li>• Offset loss with other sales (reusable bottles, alternative beverages, etc.)</li> <li>• Absorb loss</li> </ul> |
|--|--|---|

Smith College:

Distributed reusable water bottles, resulting in 130,000 fewer bottles of water with a net savings of around \$30,000 from “to-go” packages.



# Contact Information

The Responsible Purchasing Network (RPN)

The Center for A New American Dream

6930 Carroll Ave., Ste. 900

Takoma Park, MD 20912

301.891.3683 x 118

[phillip@newdream.org](mailto:phillip@newdream.org)

[www.responsiblepurchasing.org](http://www.responsiblepurchasing.org)

Thank You!

# Membership and Consulting Available

[www.ResponsiblePurchasing.org](http://www.ResponsiblePurchasing.org)

1-877-68-DREAM

[rpn@newdream.org](mailto:rpn@newdream.org)



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[www.ResponsiblePurchasing.org](http://www.ResponsiblePurchasing.org)



# Join RPN

**Because Every Purchase Matters.**

## **Membership Benefits:**

- ▶ **Model policies and specifications**
- ▶ **Green purchasing webinars**
- ▶ **Certified green products database**
- ▶ **Expert sustainability speakers**
- ▶ **Responsible Purchasing Awards**

## **Consulting Services:**

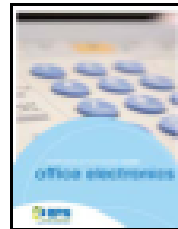
- ▶ **Custom green specifications**
- ▶ **Green purchasing policies**
- ▶ **Life Cycle Analyses**
- ▶ **Green office audits**
- ▶ **Cost-saving green practices**



***“RPN provided us with the data analysis demonstrating the long-term, positive environmental effects made by shifting to more responsibly made products.”***

*Perry Plumart, Deputy Director, Green the Capitol Office,  
U.S. House of Representatives. Office of Greening the Capitol*

RPN's series of Responsible Purchasing Guides includes best practices, policies, specs, standards, case studies, calculators, group contracts, and green product lists for:



- ▶ Carbon offsets
  - ▶ Cleaners
  - ▶ Computers
  - ▶ Drinking water
  - ▶ Faith organizations
  - ▶ Fleet vehicles
  - ▶ Fluorescent lighting
  - ▶ Food services
  - ▶ Graffiti remover
  - ▶ LED lighting
  - ▶ Office electronics
  - ▶ Office paper
  - ▶ Paint
  - ▶ Renewable energy
  - ▶ Tires & wheel weights
  - ▶ Toner cartridges
- ... and more coming soon

For membership inquiries & consulting rates,  
please contact:

The Responsible Purchasing Network  
[www.ResponsiblePurchasing.org](http://www.ResponsiblePurchasing.org)  
[rpn@newdream.org](mailto:rpn@newdream.org)

Center for a New American Dream  
6930 Carroll Avenue, Suite 900  
Takoma Park, MD 20912  
301-891-3683



# Sustainability Tracking, Assessment & Rating System (STARS):

Subtitle (if needed)

Bottled Water Alternatives, University Edition

October 29, 2009

Meghan Fay  
STARS Program Manager  
[meghan@aaashe.org](mailto:meghan@aaashe.org)

# About AASHE

- Mission: Empower higher education to lead sustainability transformation
- Professional association - serve Faculty, Staff, Students + Administrators
- Founded in 2006
- 800+ Campus Members
- Programs include Resource Center, PCC, STARS

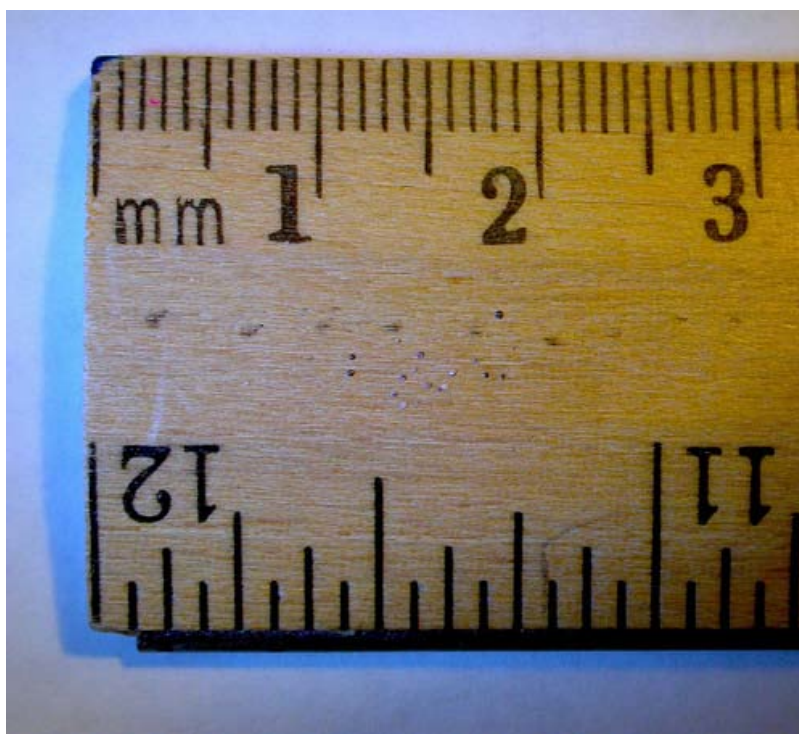


# About STARS

- An innovative, voluntary, self-reporting framework for recognizing and gauging progress toward sustainability for colleges and universities.
- A guide for advancing sustainability in all sectors of higher education.
- A common standard of measurement for sustainability in higher education.
- A tool that promotes a comprehensive understanding of sustainability that includes its social, economic and environmental dimensions.

# Why is STARS Needed?

“You can only manage what you can measure.”



# Collaboration VS. Competition



# Goals of STARS

- Sustainability guide for all sectors of higher education
- Compare over time + across institutions
- Create incentives to improve
- Facilitate information sharing
- Build a stronger, more diverse campus sustainability community

# Founding Partners of STARS



Association of College & University Housing Officers – International



**Advancing Campus Activities  
in Higher Education**



Council for Christian Colleges & Universities



National Association of College and University Business Officers



Society for College and University Planning

INTEGRATED PLANNING FOR HIGHER EDUCATION



[www.ResponsiblePurchasing.org](http://www.ResponsiblePurchasing.org)



## Categories and Subcategories

### Education & Research

Co-Curricular Education; Curriculum; Research

### Operations

Buildings; Climate; Dining Services; Energy; Grounds; Purchasing; Transportation; Waste; Water

### Planning, Administration & Engagement

Coordination & Planning; Diversity and Affordability; Human Resources; Investment; Public Engagement

# STARS Ratings

Rating Level	Minimum Score Required
STARS Bronze	25
STARS Silver	45
STARS Gold	65
STARS Platinum	85
STARS Reporter	For institutions that wish to use STARS and submit data publicly but are not pursuing a rating

## Register to become a STARS Charter Participant

By registering for STARS now, this will enable you to become **pioneers** of the system and help shape what happens on your campuses.



## How Much Does it Cost?

Institutions that register on or before December 31, 2009:

AASHE Member.....	\$650
Non-Member.....	\$1,150

Institutions that register on or after January 1, 2010:

AASHE Member .....	\$900
Non-Member .....	\$1,400

## January Launch

- Reporting Tool
- STARS website
- Logos
- Media campaign

## Contact Information

Meghan Fay  
STARS Program Manager  
AASHE  
859-533-8271  
[stars@aashe.org](mailto:stars@aashe.org)  
[www.aashe.org/stars](http://www.aashe.org/stars)



Thank You!

# Case Study: The University of Winnipeg

Bottled Water Alternatives, University Edition  
October 29, 2009

David Jacks, The Canadian Federation of Students  
(CFS)

[campaigns@cfsmb.ca](mailto:campaigns@cfsmb.ca)

# Campaign Summary

- **Canadian Federation of Students**
  - Canada's National Student Organisation
  - Representing roughly one-half million students nation-wide
  - Issues: Post-secondary education accessibility, social justice, environment
- **National Campaign: Bottled Water on Campus (brief timeline)**



-May 2008, national student body votes to take on campaign, joined Polaris Institute, Sierra Youth Coalition and others

-October 2008, national campaign brings Maude Barlow and David Suzuki to campuses across the country

-January 2009, University of Winnipeg Students' Association takes on campaign at UW following presentation from Tony Clarke, author of *The Human Footprint*

-March 2009, following the student-led campaign and student referendum, the University of Winnipeg bans bottled water free campus

# Students Lead the Way

- Student initiated campaign
- Students met with national and provincial environmental organisations to build a local coalition
- Students participated in workshops, began to take action on local municipal water issues
- Student organisers developed campaign materials, began informing peers on the issue through on-campus tabling, classroom presentations and posters/handbills
- Other organisations' support provided research, credibility to student campaign
- **Students became engaged**



## Meetings with Administration

- Student organisers approached the **Campus Sustainability Office (SCO)**
    - Administrative Function of the University
    - Initiates research and development for on-campus sustainability initiatives (such as Energy Management, Resource Conservation, Air Quality and Water management, Green Procurement and Sustainable Transportation)
  - SCO endorsed campaign and provided input.  
Discussed potential barriers and issues, such as Pepsi Exclusivity contract, existing water quality issues, existing water access issues.
  - SCO developed a brief report to the President outlining these issues, as well as analysis of previous campus water quality reports.
- Shared this information with student organisers.



## Meetings with Administration

- Student organisers arranged a meeting with the President of the University of Winnipeg, Dr. Lloyd Axworthy
  - Dr. Axworthy was once Canada's Minister of Foreign Affairs, Minister Responsible for the Environment. He is known for his work in the United Nations on human security issues (such as the right to access potable water)
- Dr. Axworthy invited members of the Senior Administration, including the Vice-President Human Resources, Sustainability and Audit as well as key staff
- Students discussed environmental impact of bottled water, cost for students, and water as a human right
- Students outlined that the University would be a national leader in sustainability initiatives, and the important profile of the University.
- A water safety audit was established with a leading professor (Canada Research Chair on Water Toxicity)
- President asked level of student support. A general student referendum was initiated by the student union. The student body voted in 75% in favour of the *"progressive elimination of bottled water on campus"*.



# Challenges

## For Administration

- Pepsi Contract
- Water Quality
- Water Upgrades
- Costs
  - loss of revenue from Pepsi
  - costs of upgrades

## For Students

- Student Awareness
- Student Referendum
- Student Concerns
  - health
  - consumer choice
  - access
  - timeline of bottled water ban



# Water Fountain Upgrades



# Upgrades



# Conclusion

**"We have to examine every decision we make through the lens of how it contributes to a sustainable environment,**

**"We have a responsibility as a university to show the way and give our students facilities that walk the talk. We're not just teaching it, we're living it,"**

**"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."**

Dr. Lloyd Axworthy, President, University of Winnipeg. March 22nd, 2009.

Bottled Water Free Campus Press Conference.



# Contact Information

## The Canadian Federation of Students

309-323 Portage Avenue  
Winnipeg, Manitoba, Canada  
R3B 2C1

Tel: (204) 786-0787

Email: [campaigns@cfsmb.ca](mailto:campaigns@cfsmb.ca)

Website:

[www.cfsmb.ca](http://www.cfsmb.ca)

[www.cfs-fcee.ca](http://www.cfs-fcee.ca)

Thank You!

# Student Campaigns

## Bottled Water Alternatives, University Edition October 29, 2009

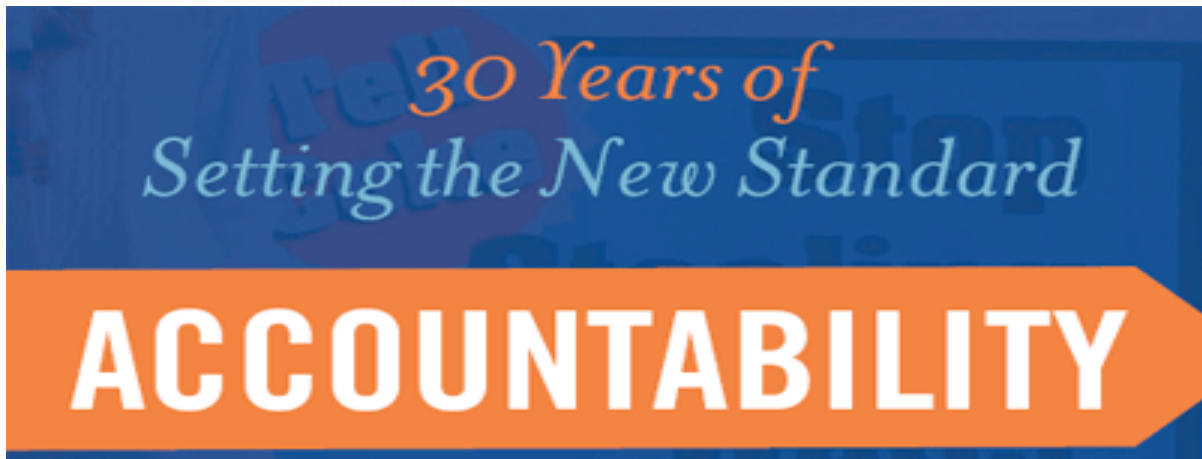
John Stewart

National Organizer, Corporate  
Accountability International

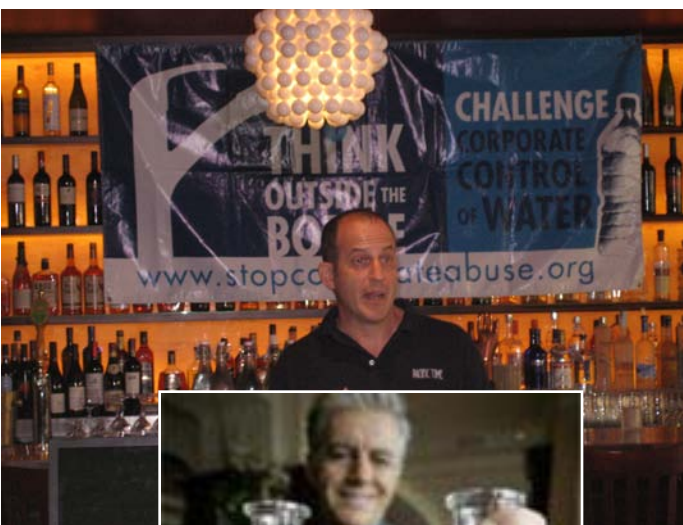
[jstewart@stopcorporateabuse.org](mailto:jstewart@stopcorporateabuse.org)



**Corporate Accountability International** is a non-profit, membership-based, grassroots organization that works to protect people and the environment from dangerous and irresponsible corporate practices.



For 30 years, we have been waging winning campaigns that have resulted in getting some of the largest transnational corporations in the world to end their life-threatening abuses. Right now we are addressing one of the greatest challenges facing humanity today—**water**.







# Download our Student Organizing Toolkit



# Join our Facebook Group [www.facebook.com/thinkoutsidethebottle](http://www.facebook.com/thinkoutsidethebottle)



## Join our Student Listserv and Weekly Conference Calls

### National student listserve

Keep up-to-date with other campus campaigns

### Conference Calls

Twice-a-week

Skills Sessions and training

Info-sharing

Strategic Planning

Regional coordination



# Organize Your Campus

**Phase 1: Build a group and raise awareness**

**Phase 2: Make a Plan and enlist student government and the administration to cut spending on bottled water**

**Phase 3: Work to make a larger impact on the community and surrounding schools**



# Campus Campaign profile: Tufts

- Set clear goals
- Build a buzz
- Organize a Tap Water Challenge
- Participate in our national days of action
- Get student and faculty support
- Pass a resolution through the student government and/or administration
- Go beyond campus: Get your Governor to declare your state Bottled-Water Free!



# Join the Team

- Member
- Online Activist
- Jobs
- Internships



## Contact Information

**John Stewart**

**Corporate Accountability International**

**617-695-2525**

**[jstewart@stopcorporateabuse.org](mailto:jstewart@stopcorporateabuse.org)**

**[www.facebook.com/thinkoutsidethebottle](http://www.facebook.com/thinkoutsidethebottle)**

**[www.ThinkOutsidetheBottle.org](http://www.ThinkOutsidetheBottle.org)**

**[www.StopCorporateAbuse.org](http://www.StopCorporateAbuse.org)**

# Case Study: Washington University in St. Louis

Bottled Water Alternatives, University Edition  
October 29, 2009

Deborah Howard, Assistant to the Executive Vice  
Chancellor of Administration and Liz Kramer, Fellow

[Deborah\\_Howard@WUSTL.EDU](mailto:Deborah_Howard@WUSTL.EDU)

[Kramer@wustl.edu](mailto:Kramer@wustl.edu)



## Overview of the WUSTL Bottled Water Ban

- ▶ Idea for bottled water ban first floated for Commencement 2008.
- ▶ Student leadership picked up the idea and began a campaign in the fall of 2008.
- ▶ Administration worked internally to build consensus and support starting in the summer 2008 and throughout the fall.
- ▶ Implemented for vending and most dining in January 2009, taking full effect in March.
- ▶ On-going education, infrastructure improvements and compromise for a successful bottled water ban.

## Why Ban Bottled Water?

- ▶ Bottled water is wasteful in transportation, processing and production.
- ▶ Downcycling of plastic bottles rather than recycling or reuse.
- ▶ Supporting our St. Louis municipal system.
- ▶ Asking members of our community to make a lifestyle change for the sake of the University's sustainability.

## Challenges

- ▶ Convenience of bottled water.
- ▶ Safety of bottled water and of tap water sources..
- ▶ Concerns about access to tap water on campus.
- ▶ Mixed messages due to other bottled drinks.
- ▶ Safety at large events, especially outdoors.
- ▶ Little education or awareness about water issues.



## Convenience of Bottled Water

- ▶ Students, staff and faculty had concerns about the convenience of bottled water for everyday use.
- ▶ Students designed and sold 'Tap It' water bottles.
- ▶ All freshman receive new water bottles upon arrival.
- ▶ Water bottles available for sale in the bookstore.
- ▶ Infrastructure improvement to drinking fountains throughout campus for greater access.
- ▶ 5-gallon water coolers are still permitted and are located in many offices and student rooms.

## Safety of Bottled Water and Tap Sources

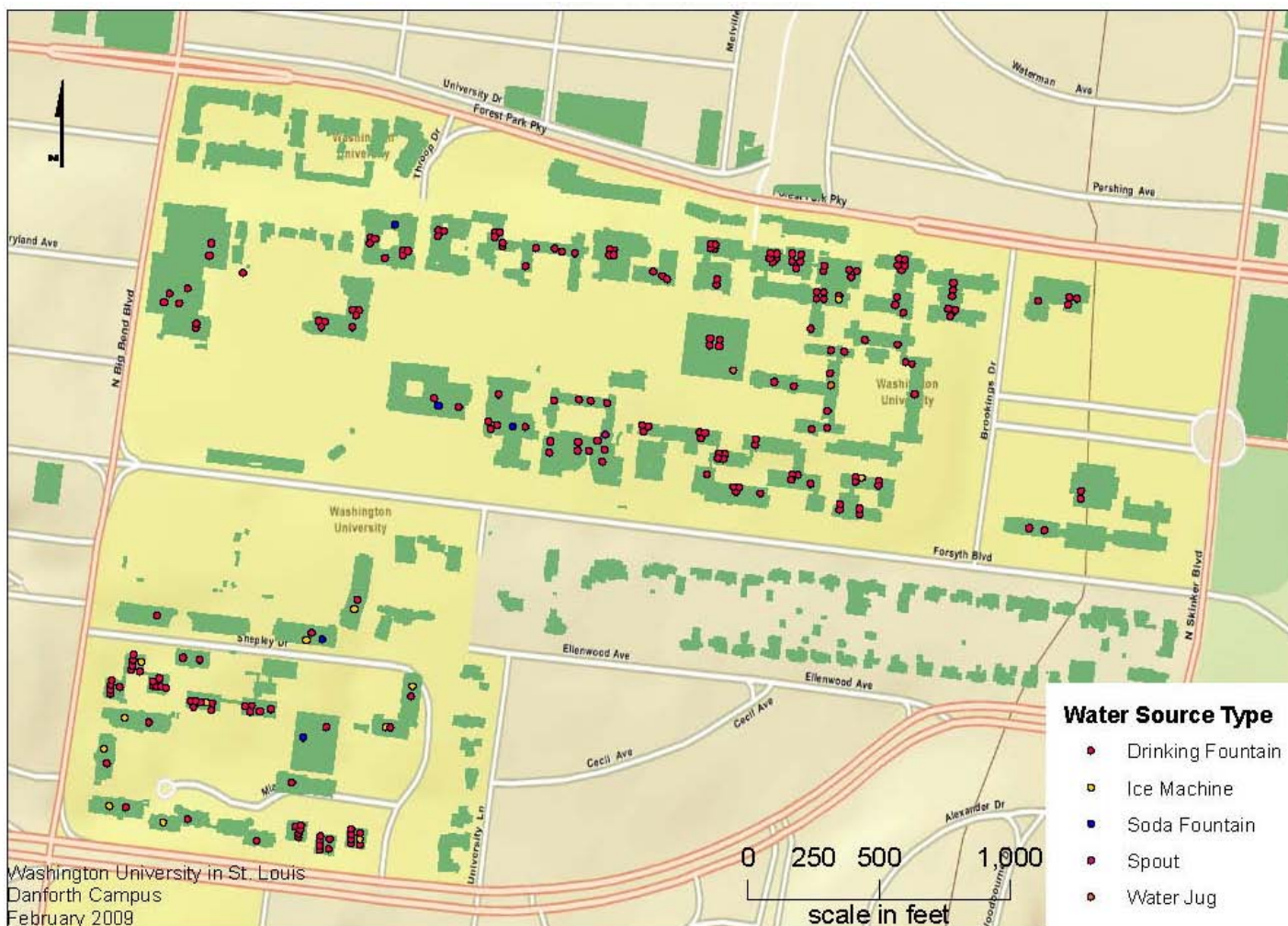
- ▶ Some misconceptions about the safety of bottled water as compared to tap water.
- ▶ Student campaign addressed as part of their literature.
- ▶ Checked into the safety of St. Louis City and County water as determined by the EPA.
- ▶ Followed-up on specific questions about safety of public drinking fountains and public water sources.
- ▶ Confirmed that housekeeping does clean the drinking fountains regularly.

## Concerns About Access to Tap Water on Campus

- ▶ Tap water had been available in drinking fountains, soda fountains, some free-standing carafes, and in water coolers previously.
- ▶ All water sources were mapped and tested for functionality. Over 75 were reported for problems to facilities. A new drinking fountain was installed in the popular 24-hour café in the library. New point-of-use dispensers were added at the conference center.
- ▶ A current project in the student senate is looking at further possibilities for infrastructure improvements, including potentially labeling and new access points.



## Drinking Fountain Map



## Mixed Messages About Other Bottled Drinks

- ▶ Many community members were disappointed and confused why we did not also address sodas, juices and milks, also in plastic bottles.
- ▶ Focused on the idea that these things do not come from the tap and are therefore not directly replaceable.
- ▶ Some ongoing concern about increased consumption of other beverages instead of bottled water due to direct replacement in vending – no measured data available, but could be part of a future education campaign.



## Safety at Large Events, Especially Outdoors

- ▶ Worked directly with Commencement to find a compromise for water bottles – many fewer bottles were purchased, and put on tables with signs specifying that these bottles were for guests only.
- ▶ WILD (biannual outdoor concert for students) offered other options and is working with the student-run Green Events Commission (GEC) in the future.
- ▶ Administration and GEC work with groups on a case-by-case basis to determine appropriate water.
- ▶ Students have suggested installing an outdoor drinking fountain; currently being investigated.



# Case Study: Washington University in St. Louis Student “Tap it” Campaign

Bottled Water Alternatives, University Edition  
October 29, 2009

Kady McFadden, Student  
[kadymcfadden@gmail.com](mailto:kadymcfadden@gmail.com)



## “Tap It” Campaign

- ▶ Student run campaign
- ▶ Goal was to gain student support for ban
- ▶ Did this by hosting events and raising awareness of the issue on campus



## Events Hosted

- ▶ Built a 'Tower of Consumption' out of used bottles





## Events Hosted

- ▶ Distributed flyers on campus



U.S. water quality standards set by the EPA for tap water are more stringent than the FDA's standards for bottled water.<sup>1</sup>

A NRDC study found 1/3 of bottled water to be contaminated above the allowable limits.<sup>2</sup>



## Events Hosted

### ► Put table tents in dining areas

**Energy Consumption:** It is estimated that filling each bottled water bottle one-quarter full of oil represents the oil expended in producing, packaging and transporting bottled water.<sup>1</sup>

**STL Tap Water:** St. Louis was awarded “Best Tasting City Water in America” in 2007 by the U.S. Conference of Mayors.<sup>2</sup>

**False Security?:** U.S. water quality standards set by the EPA for tap water are more stringent than the FDA’s standards for bottled water.<sup>3</sup> Also a NRDC study found 1/3 of bottled water to be contaminated above the allowable limits.<sup>4</sup>

**Wasted Plastic:** More than 60 million plastic bottles end up in landfills everyday. The bottles cannot be recycled, only decycled into low grade plastics.<sup>5</sup>

**It’s the Same:** Over 25% of bottled water is just tap water - it comes from municipal sources <sup>6</sup> (including Dasani)

Really the question is...why



## Events Hosted

- ▶ Held Tap Water Challenges





## Events Hosted

- ▶ Sold “Tap-It” water bottles (BPA free)







## What Went Well

- ▶ Generating student awareness on the issue; students talked about it and realized the inefficiencies
- ▶ Widespread student support of the initiative

## Contact Information

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[kadymcfadden@gmail.com](mailto:kadymcfadden@gmail.com)

Thank You!