



MEMORANDUM

Engineering Division

To: Greg Armendariz, Public Works Director/City Engineer
From: Elizabeth Koo, Administrative Analyst
Kathleen Phalen, Utility Engineer
Subject: **Implications and Cost of Adopting a Policy to Ban Use of Single-Serving Bottled Water by the City of Milpitas**
Date: March 17, 2008

Background

On November 27, 2007, the City Council directed staff to review the implications, associated costs, and other relevant facts associated with the City's use of bottled water and provide a report of the findings. For the purpose of this assessment, we consider bottled water to be that commodity commercially packaged and sold as a single serving in a disposable plastic bottle.

Summary of City's Current Usage and Expenditure for Bottled Water

We surveyed all City Departments to determine the current use of bottled water. The responses did not show that there is extensive usage. When bottled water is purchased, it is generally for the following reasons.

- It is provided as courtesy refreshment for officials, guests, the general public and staff attending meetings or functions at city facilities.
- It is provided to city field personnel who do not have ready access to tap water while on duty to protect their health and safety.
- A certain amount is stored for use to be given out the public in case there is an emergency disruption of the municipal supply.

The City's total annual cost for bottled water is approximately \$2,500. This amount should be considered an approximate value because it is based on department staff estimates rather than financial records. Finance does not break out expenditures for bottled water and so could not provide exact values. About half of this cost is recouped by the resale of bottled water to the public by Recreation Services. The breakdown by department is as follows:

- City Manager's Office spends about \$50 per year for bottled water used at receptions and special event functions.
- City Clerk's Office spends about \$25 per year for bottled water provided at Council closed sessions and public meetings.

- Recreation Services spends about \$1,200/year for bottled water. Most of this is resold to the public at the Sport Center. Recreation services also provide some bottled water to staff and stores some water for emergency purposes.
- Human Resources spends about \$100 per year for water offered as a refreshment to non-City staff serving on oral boards.
- Fire spends about \$450 per year for bottled water for field training sessions and citizen emergency preparedness classes.
- Police spends about \$100 per year for bottled water distributed to patrol officers using city vehicles during seasonal heat waves.
- Bottled water is also offered at some commission and subcommittee meetings. We were not able to get accurate cost estimates from all commission liaisons, but given that there are 16 commissions and 10 subcommittees, this use may be expected to cost the City \$250 to \$500 per year.

Implications:

The unit cost of a bottle of water ranges from about \$0.20 to \$0.85 per bottle.¹ Excluding the water resold by the Recreation Department and assuming departments are paying approximately \$0.33 per bottle, the usage is about 3,700 bottles per year. This is not extensive, but it could be reduced through substitution of municipal tap water.

There is a growing movement to encourage the public to use tap water and, as a water purveyor, the City may wish to demonstrate by example that tap water is a safe, environmentally superior, and economical alternative to bottled water. The American Water Works Association “Only Tap Water Delivers” campaign and various environmental organization campaigns such as the Corporate Accountability International “Think Outside the Bottle Pledge” are examples of public outreach to encourage use of municipal tap water. Other notable events marking the movement away from bottled water use include:

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| June 2007 | The United States Conference of Mayors adopted a resolution of the importance of municipal water and the impact of bottled water on the municipal waste stream (text of resolution is attached). |
| June 2007 | City of San Francisco banned the municipality’s purchase of single use bottled water for employees, city concessions, and city facilities. |
| December 2007 | City of San Jose directed staff to examine the feasibility and cost savings from disallowing any City department or agency from using public funds to purchase single-serving bottles of water, and to ascertain whether limited exceptions may need to exist for community events, or for health or safety reasons. |

Options for Eliminating or Reducing the City’s Purchase of Bottled Water:

For public meetings and functions at City facilities, the City may substitute reusable carafes or pitchers of tap water with cups. The City Clerk’s Office has already purchased carafes for use at

¹ Safeway.com charges \$4.50 for a 24 pack of Arrowhead and \$4.99 for a 6 pack of Evian.

City Hall functions. Similar purchases could be made for the Sports Complex and other facilities hosting public events. Unbreakable plastic or aluminum pitchers range in price from \$15 to \$20¹.

We would not recommend offering reusable cups to the public because the City does not have staff or facilities to wash and sterilize cups. Instead, the City could purchase disposable cups made of plastic, Styrofoam, or paper. Plastic appears to be the best choice as it is the least expensive is also more feasibly recycled, especially when it does not contain food waste. Plastic cups are about \$5 per 1000, Styrofoam is about \$30 per 1000 and waxed paper cups are \$105 per 1000². The actual cost of municipal tap water is negligible when compared to bottled water. A sixteen ounce serving of the City’s tap water costs \$0.00057³. The City’s annual cost of cups and water, if served at the same rate as bottled water, would be about \$20. Adding the one-time purchase of 10 pitchers increases the first year cost for providing tap water at public events to about \$170.

Field personnel cannot be feasibly served with open pitchers of water but could switch to reusable water bottles. Suppliers such as Nalgene make a variety of reusable plastic bottles ranging in price from \$5 to \$10. Unit prices are lower with a larger order and a minimum order of 144 bottles could be ordered with the City’s name and logo⁴. An order of 150 bottles would cost about \$750, but should last several years.

As shown in the table below, it even with the purchase of pitchers and reusable bottles, it would be less expensive for the City to switch to tap water. Cost will be even lower in future years if the City does not need to replace pitchers and bottles.

First Year Cost Comparison of Bottled and Tap Water							
	Bottled Water	Equivalent Servings	Cost of Tap Water	Cost of Cups	Pitchers	Reusable Bottles	Cost to Serve Tap Water
City Mgr	\$50	152	\$0.09	\$0.76			\$0.84
City Clerk	\$25	76	\$0.04	\$0.38			\$0.42
HR	\$100	303	\$0.17	\$1.52			\$1.69
Commissions	\$500	1515	\$0.86	\$7.58	\$150		\$158.44
Fire	\$450	1364	\$0.78	\$6.82			\$7.60
Police	\$100	303	\$0.17			\$750	\$750.17
Total	\$1,225	3712	\$2.16	\$17.05	\$150	\$750	\$919.16

¹ Target Online acrylic 71 oz. at \$15, aluminum 98 oz at \$19.99

² Office Max online pricing for 16 oz Solo Plastic Party Cups, Dart Insulated Styrofoam Cups, and Dixie Sage Design Cold Drink Cups.

³ The City’s current commercial rate for municipal tap water is \$3.40 per hundred cubic foot unit. A hundred cubic feet is equivalent to 748 gallons and would fill 6,000 16 oz bottles.

⁴ Nalgene 12 oz ATB LDPE Bottle at \$5, 32 oz wide mouth “Filter for Good” polycarbonate loop top bottle at \$10.

Recommendation

We recommend that the City consider banning the purchase of bottled water for public functions and field personnel. This will save the City money and will demonstrate by example that tap water is a safe, environmentally superior, and economical alternative to bottled water. We recommend that this ban be tempered with a provision that the City Manager or his designee can waive the prohibition in circumstances where he believes it to be in the City's best interests.

We do not recommend banning the storage of bottled water for emergency supply at this time. Staff will review emergency processes in the context of the overall municipal water emergency planning effort that is underway. We do not have a recommendation for the Recreation Services resale of bottled water. This is a service that has been requested by the public and does provide a small revenue stream to the Department.

**The United States Conference of Mayors
75th Anniversary Adopted Resolutions – June 2007**

IMPORTANCE OF MUNICIPAL WATER

WHEREAS, the United States' municipal water systems are among the finest in the world; and

WHEREAS, high quality, safe drinking water is already available at most public locations; and

WHEREAS, mayors are responsible for delivering safe and affordable water to our citizens; and

WHEREAS, local governments invest approximately \$43 billion a year for pure drinking water and treating wastewater; and

WHEREAS, US consumers spend more than \$11 billion a year on bottled water; and

WHEREAS, bottled water costs more than an equivalent volume of gasoline, equivalent to 1,000 to 10,000 times more than tap water; and

WHEREAS, more than a quarter of bottled water is sourced from municipal tap water; and

WHEREAS, bottled water must travel many miles from the source, resulting in the burning of massive amounts of fossil fuels, releasing CO₂ and other pollution into the atmosphere; and

WHEREAS, plastic water bottles are one of the fastest growing sources of municipal waste; and

WHEREAS, in the U.S. the plastic bottles produced for water require 1.5 million barrels of oil per year, enough to generate electricity for 250,000 homes or fuel 100,000 cars for a year; and

WHEREAS, we applaud The US Conference of Mayors for its National City Water Taste Test, which recognizes all of the great work municipal water systems do for its residents on a daily basis, year after year; and

NOW, THEREFORE, BE IT RESOLVED that The US Conference of Mayors encourage a compilation of information regarding the importance of municipal water and the impact of bottled water on municipal waste.