



United States Department of the Interior

NATIONAL PARK SERVICE  
Southeast Utah Group  
Arches and Canyonlands National Parks  
Moab, Utah 84532

*Laura*



IN REPLY REFER TO  
CANY (IMR-D)

March 19, 2012

Memorandum

To: Regional Director, Intermountain Region

From: Superintendent, Canyonland/Archs National Parks /s/

Subject: Request for Approval to Eliminate the Sale of Water in Individual Disposable Containers

Per the Director's recent policy designed to recycle and reduce disposable plastic bottles in National Parks, Archs/Canyonlands National Parks has completed an analysis of the potential effects of ending the vending of disposable water bottles in the parks.

There are no concession food service operations in either park. There are a few vending machines operated by the Cooperating Association to sell bottled water as a visitor convenience. The Association is allowed, but is not required, to provide vended water. Recently, the Association chose to cease vending water at Arches National Park, focusing instead on the sale of re-useable water bottles in conjunction with the park's water bottle filling station there.

The Association intends to cease vending water bottles in Canyonlands National Park as well once water bottle filling stations there are fully operational and displays are in place. Based on the attached evaluation, the park requests approval of this collaborative effort.

Attachment

Recommended: *Laura E. Jones* 3/20/12  
Deputy Regional Director

Approved: *JL Wessela* 3/29/12  
Regional Director

## **Arches & Canyonlands National Parks Analysis of potential impacts/effects of voluntary bottle ban**

### **1. Amount of waste eliminated and pros/cons to overall park operations**

By volume, Arches and Canyonlands could eliminate up to 25% of what is currently recycled and up to 15% of the park's overall waste stream.

#### Pros:

- Decreases in plastics going to the landfill.
- Decreases in monetary costs to any visitor who would have purchased more than one bottle of water within the park; and if our education efforts are successful, visitors may save additional money as they continue to refill their reusable bottles after they leave the park.
- Savings of resources used and Green House Gases (GHCs) released during the transportation of waste and recyclables and during the recycling process.
- Decreases in litter associated with disposable .
- Reduces risk of plastic bottle ingestion. Birds, rodents, and larger mammals are known to be attracted to plastic bottles. Thinking there is food/water inside, animals chew and inadvertently swallow plastic pieces. It is well documented that ingested plastic can become lodged in throats and choked on and/or accumulates and creates blockages in digestive tracks.
- Diminishes release of toxic chemicals such as bisphenol A (BPA). Toxins leached from plastics are known to have negative effects on wildlife.

#### Cons:

- Bottled water is a high profit margin item for the park cooperating association. If reusable bottle sales (lower profit margin) do not make up for this, the cooperating association could incur some financial loss, although it would be minimal.
- Some people perceive a risk to visitors of dehydration. (Bottled water is a relatively recent retail innovation and this concern had been well addressed before its advent.)

### **2. Infrastructure Costs and funding source(s) for filling stations**

Arches National Park constructed a water filling station in FY 2011 at a cost of less than \$10,000 (FLREA funding). At the Island in the Sky District of Canyonlands, a water filling station was included in the visitor center rehabilitation that took place in FY 2008. In the Needles District of Canyonlands, no new filling stations have been constructed. Water is available at both the visitor center and at the campground.

### **3. Contractual implications on concessioners, including considerations of new leaseholder surrender interest or possessory interest**

Not applicable.

### **4. Operational costs of filling stations including utilities and regular public health testing**

The parks estimate that they will spend about \$100 a year on each filling station, which includes

switching their operation from fall/winter to winter/spring and water quality sampling. With a total two filling stations at present and a third planned it would equal \$300 annually.

**5. Cost and availability of BPA-free reusable containers:**

There are a variety of BPA-free reusable water containers being sold by our cooperating association – they range in price from \$3.95 to \$14.99. The Association is continuing market research to provide a very inexpensive model.

**6. Effect on concessioner and cooperating association sales revenue**

The only vending machines are operated by our Cooperating Association, the Canyonlands Natural History Association (CNHA). CNHA sells the water as a visitor convenience item under a concession permit. In 2011, total water and “Gatorade” sales at Arches and Canyonlands represented approximately 1.5% of total gross sales for the Association (\$36,378 in beverage sales from total gross revenue of \$2,356,963).

**7. Availability of water within concessioner food service operations**

There are no concession food service operations in either park.

**8. Visitor Education in the park and on line so that visitors may come prepared with their own water bottles**

Within the park, information about the filling stations and reusable water bottle promotion will be included in the park newspapers. Social media (Facebook and Twitter) will also be used extensively.

**9. Results of consultation with NPS Public Health Office**

The parks have annual inspection and consultation meetings with the NPS Public Health Office. The Park Engineer reviewed the design of the water filling stations and all aspects were found to be satisfactory.

**10. A sign plan so that visitors can easily find filling stations**

There is currently temporary signage in place at all of the water filling stations within the park. Permanent signs are on-order and should arrive soon.

**11. Safety considerations for visitors who may resort to not carrying enough water or drinking from surface water sources with potential exposure to disease**

Long before the advent of bottled water being sold in vending machines, safety considerations regarding desert hiking have been at the forefront of visitor information and education at both parks. Water has always only been available at a few select locations within each park. At Arches, water is available at the visitor center, the campground, and at Devils Garden trailhead (one of the most popular trailheads in the park). At Island in the Sky at Canyonlands, water is available only at the visitor center (we haul all water to Island in the Sky) and at Needles water is available at the visitor center and in the campground. It is not as if visitors have come to rely on the retail sale of water within Canyonlands or Arches. The filling stations are prominently located

at the entrance to visitor centers, helping to reinforce the safety message relating to carrying enough water in a desert environment.

**12. A system for annual evaluation of the program, including public response, visitor satisfaction, buying behavior, public safety, and plastic collection rates**

On an annual basis the park would monitor and collect the following data:

- Visitor satisfaction/public response by using the visitor comment forms -- log in complaints/compliments (Public Response and Visitor Satisfaction).
- Safety Officer/NPS Public Health Representative will keep a log of any safety issue related to water availability. (Public Safety).
- Interpretation will track sales with CNHA (Buying Behavior).
- Maintenance will track collection rates.

**13. Results of consultation cooperating association**

Informal conversations with the Cooperating Association began in 2009, shortly after the bottle ban at Zion National Park. At that time the Cooperating Association agreed to voluntarily remove the vending machines from Arches and Canyonlands as soon as the park was able to provide a viable, year-round source of potable water at the visitor centers.

**14. Timeline for removal of vending machines**

The vending machines will be removed as soon as stock of bottled water at CNHA is depleted and once the filling stations are fully operational. It is expected that this will occur almost immediately at Arches, by late spring 2012 at Island in the Sky and sometime late spring or early summer at Needles.

March 23, 2012

# Got Water?



**Water is a precious resource.** In the desert, it's even more so. That's why it's important to have a good water supply when you're out there. Here are some tips to help you stay hydrated:

When you're out there, you'll need to have a good water supply. Here are some tips to help you stay hydrated:

**By The Numbers**  
A hiker can survive for about 3 days without water. That's why it's important to have a good water supply when you're out there. Here are some tips to help you stay hydrated:

# Got Water?

## Why a Filtration Station?

Water is essential for life. In a desert environment, water is scarce. Filtration stations provide a safe and reliable source of water for visitors. They also help protect the natural resources of the park.

Even if you don't plan to drink the water, it's important to have a safe source of water available. This is especially true for children and the elderly. Make sure you have a safe source of water when you visit.



## By The Numbers

Approximately 10 million gallons of water are used each year in the park. This is equivalent to the amount of water used in a city of 100,000 people. The park is committed to reducing water usage and protecting the natural resources of the park.

NATIONAL  
PARK  
SERVICE

# Got Water?



**It's Not Always Easy**  
Getting water in the desert can be a challenge. In some areas, water is scarce and people have to travel long distances to get it. In other areas, water is abundant but of poor quality. In this photo, a person is shown kneeling in a desert landscape, filling a water container. The person is wearing a dark jacket and pants. The background shows a rocky, arid environment with some sparse vegetation.



# READING FILE



United States Department of the Interior  
NATIONAL PARK SERVICE  
BRYCE CANYON NATIONAL PARK  
Highway 63, #1 Park Road  
PO Box 640201  
Bryce Canyon, UT 84764-0201



In Reply Refer To:

D5019

Memorandum

To: Regional Director, Intermountain Region  
From: Superintendent, Bryce Canyon National Park  
Subject: Disposable Plastic Bottle Reduction and Recycling Update

On December 14, 2011, Director Jarvis issued policy on the recycling and reduction of disposable plastic water bottles in parks. The policy stated "where appropriate, superintendents may request approval from the regional director to eliminate the sale of water in disposable plastic bottles by analyzing and addressing the following factors in writing." By copy of this memorandum, Bryce Canyon National Park is requesting approval to eliminate the sale of individual plastic disposable bottles. Attached are 2 spreadsheets that address each point of evaluation articulated in the Policy Memorandum 11-3.

At Bryce Canyon, this will be a phased approach to monitor the efficacy of improving visitor use of new filling stations to be installed in Spring 2014. A principle safety issue for the park is visitor hydration and international visitors are sometimes reluctant to use other than bottled water. A "hydration campaign" is being launched in cooperation with Bryce Canyon Natural History Association (BCNHA) and Forever Resorts (concessioner) to educate and promote hydration and the use of re-usable water bottles, rather than disposable bottles. As this will be a phased, monitored approach, we are not requiring BCNHA and Forever Resorts to eliminate bottled water sales immediately, rather they agreed to do so while we monitor the program's effectiveness for visitor safety. They have indicated their long-term desire to eliminate sales as well, once we establish the educational and operational means that are most effective.

At the same time, working with the WASO and Regional Partnership Offices, the park and BCNHA are proposing to enter into a corporate campaign agreement with Vapur, Inc. and Elkay, Inc. to promote sustainability and hydration. Vapur manufactures reusable plastic water bottles and Elkay manufactures water filling stations. Details of this agreement, 2 years in the making, will be forthcoming to your office very soon.

If you have any questions or require further information, please contact me at 435-834-4700.

*Jeffrey S. Bradybaugh*  
Jeff Bradybaugh

Attachments

Recommend Concurrence: *Laura E. Joss 2/30/14*  
Laura E. Joss, Deputy Regional Director

Concur: *Sue E. Masica 2/21/14*  
Sue E. Masica, Regional Director





| Evaluation Points  | Park Response   |
|--|---|
| 1. Amount of waste eliminated and pros/cons to overall park operations   | Several hundred pounds of empty water bottles waste eliminated from sales at General Store and Lodge Gift Shop(concessioner) and Visitor center ( natural history assoc.). Given the low weight of plastic disposable water bottles, it is not likely to show substantial changes; however some diversion can be tracked with point specific inspections. A phased approach will be taken as part of a "hydration campaign" to assure that visitors don't forego hydration or switch to less healthy alternatives of pre-packaged drinks.The park is pursuing installation of multiple filling stations while working with its concessionaire and cooperating association on eliminating disposable plastic bottle sales. |
| 2. Infrastructure costs and funding source(s) for filling stations   | A corporate campaign agreement is nearing final signatures that will establish discounted rates for filling stations to be purchased by Bryce Canyon Natural History Association (NHA). NHA will donate the filling stations they purchase to the park. Installation and maintenance will be conducted by the park to meet public health standards. Costs to the park: Installation will be via Franchise Fee funds (\$6000); Annual maintenance (\$1500) via base funds.   |
| 3. Contractual implications on concessioners, including consideration of new leaseholder surrender interest or possessory interest | No Leaseholder surrender interest will be incurred through the installation of filling stations purchased by NHA, donated to the park and installed by park staff. Contractual implications may be a modification to the contract, following initial phase-in, changing the concessionaire's ability to sell disposable plastic bottles; however the concessionaire and NHA are willingly participating in the program.   |
| 4. Operational costs of filling stations including utilities and regular public health testing                                     | The 6 filling stations would replace existing drinking fountains, some of which are no longer operational; accordingly, the regular public health testing would be very close to existing conditions. Operational cost will rise an approximate \$100 per station or \$600 overall for the park. One station will involve repair of a water line estimated at \$4,000   |
| 5. Cost and availability of BPA-free reusable containers   | Both the concessionaire and the NHA currently sell a range of BPA free reusable water bottles (price range ~\$4 - \$25)   |
| 6. Effect on concessioner and cooperating association sales revenue  | Not expected to be significant, both the concessionaire and the NHA are supporting the park in this effort. With a phased approach through the "hydration campaign" they will be able to sell existing bottled water stock during initial phase, leading to ultimately discontinuing sales.   |
| 7. Availability of water within concession food service operations   | Water is available. Filling stations will be available within and adjacent to concession facilities, visitor center, major viewpoints. With replacement of disfunctional water fountains with new filling stations, water availability will be increased at concession facilities, visitor center and major viewpoints.   |
| 8. Visitor education in the park and online so visitors come prepared with their own water bottles                                 | The park and NHA are working with Vapur, Inc. (manufacturer of reuseable plastic water bottles) and Elkay (manufacturer of water filling stations)on a corporate campaign agreement with specific messaging to inform visitors of the need to hydrate and the availability of reusable bottles and filling stations. The messaging campaign includes logo development with QR code technology at filling stations and facilities, as well as website information for trip planning, Health Parks - Healthy People messages and overall "hydration campaign".  |
| 9. Results of consultation with NPS Public Health Office   | No change from existing potable water source requirements. Ensure that filling stations are included in annual random potable water sampling and are properly flushed and checked where used seasonally.  |

|  |   |
|--|---|
| 10. A sign plan so the visitors can easily find filling stations   | The park is also instituting a "hike safe" campaign, using universal signage to convey to hikers four key hiking safety messages, including the necessity to bring plenty of water. These new signs will be going into place this Spring at our trail heads, in the shuttle buses and attached to map waysides throughout the park. The "hydration campaign" signage at filling stations and on-line (web and QR coding) will integrate with "hike safe" signage. |
| 11. Safety considerations for visitors who may resort to not carrying enough water or drinking from surface water sources with potential exposure to disease | Safety is a primary concern and the basis for this program. That is why the messaging campaign is so important. During initial phases, park rangers, NHA staff and concessioners will intensify hydration messaging. Park Rangers will increase PSAR efforts to contact more visitors at trailheads and encourage visitors to prepare accordingly for length of hike, etc.  |

**Evaluation Points**

**Park Response**

|   |  |
|---|--|
| 12. Results of consultation with concessioners and cooperating associations | Both the concessionaire and the NHA supporting the park to eliminate disposable plastic bottles in the near future, promote use of filling stations and increase the hydration messaging. Once the filling stations are in place, the sale of disposable plastic bottles will be phased out. |
| 13. Timeline of phase-in period   | We will be able to start installing filling stations this spring (2014) with phase out of the sale of disposable plastic bottles within a year based on success in getting international and domestic visitors accustomed to using filling stations.   |

**14. Annual Evaluation plan for:**

|                          |  |
|--------------------------|--|
| Public Response          | Park visitors have been very supportive of park sustainability programs and have often asked why we have disposable water bottle sales in the park. At nearby Zion NP public response has been overwhelmingly positive; the ZION program has been in place for several years. Both ZION and BRCA share many of the same visitors, so public response here at BRCA is expected to be similar to that experienced at ZION. The visitor comment card program will be used to help track public response. In addition, annual visitor satisfaction surveys are conducted that should provide data on facility and sustainability satisfaction compared to long-term averages for the same survey. Further, the concessioner has a robust visitor comment card program in which thousands of concession-users participate annually. These can be monitored to assess any changes in satisfaction relative to water availability, messaging and sustainability aspects of the program. |
| Visitor Satisfaction     | Annual visitor satisfaction surveys are conducted that should provide data on satisfaction compared to long-term averages for the same survey. Further, the concessioner has a robust visitor comment card program in which thousands of concession-users participate annually. These can be monitored to assess any changes in satisfaction relative to water availability, messaging and sustainability aspects of the program.  |
| Buying Behavior          | NHA and Concessioner track sales of all products. These data will be organized to compare phase out of disposable plastic water bottles and sales of reusable water bottles.   |
| Public Safety            | Park staff collect visitor safety and emergency medical incident reports. Short term and long term comparisons can be made based on incident type including dehydration or heat-related emergencies in order to track trends prior to, during and after implementation.  |
| Plastic Collection Rates | The park has an active recycling program with gross diversion rates tracked monthly. Given the low weight of plastic disposable water bottles, it is not likely to show substantial changes; however some diversion can be tracked with point specific inspections.  |



## United States Department of the Interior



NATIONAL PARK SERVICE  
Colorado National Monument  
1750 Rim Rock Drive  
Fruita, Colorado 81521

February 5, 2013

Memorandum:

To: Regional Director, Intermountain Region

From: Superintendent, Colorado National Monument

Subject: Request for Approval to Eliminate the Sale of Water in Individual Disposal Containers

On December 14, 2011, Director Jarvis issued policy on the recycling and reduction of disposable plastic water bottles in parks. The policy stated "where appropriate, superintendents may request approval from the regional director to eliminate the sale of water in disposable plastic bottles by analyzing the addressing the following factors - in writing." By copy of this memorandum, Colorado National Monument (COLM) is requesting approval to eliminate the sale of water in individual plastic disposable containers.

Colorado National Monument has experienced an increased amount of litter associated with disposable plastic bottles along Rim Rock Drive, along the rims and within all the inner canyons. These bottles are also the largest contributor to litter along ledges below the canyon rims and can be costly and dangerous to remove. In addition, waste associated with disposable bottles has become a noticeable part of the park's waste stream, compromising an estimated 10% of the park's recyclables.

There are significant environmental and monetary costs associated with the removal of litter, transport of litter to landfills, and recycle centers. As an effort to work towards "Greening" our park and being fiscally responsible, Colorado National Monument would like to eliminate the sale of water packaged in disposable water bottles starting March 2013.

We realize that a discontinuation of the sale of water in disposable containers is only one of the actions that would be taken; the park will also be implementing an Environmental Management Program in 2013, which will include a robust park wide solid waste recycling program. Over the last year, we have installed three fill stations and stocked our cooperative association bookstore with a variety of BPA-free reusable water bottles for purchase. We have developed new signage at fill stations that is intended to educate visitors about fill stations and to encourage visitors to use reusable water bottles instead of individual disposable water bottles while still providing a safe and enjoyable park experience.

As a commitment to support the National Park Service's new policy on the recycling and reduction of disposable plastic water bottles in parks, Colorado National Monument Association's board members have agreed to voluntarily discontinue the sale of disposable water containers in their bookstore.



## **Colorado National Monument Analysis of Potential Impacts/Effects of Disposable Water Bottle Ban**

1. **Amount of waste eliminated and pros/cons** to overall park operations by volume, Colorado National Monument (COLM) could eliminate up to 10% of what is currently recycled.

**Pros:**

- Decreases in plastics going to the landfill
- Decreases in monetary costs to any visitor who would have purchased more than one bottle of water within the park; and if our education efforts are successful, visitors may save additional money as they continue to refill their reusable bottles after they leave the park.
- Savings of resources used and Green House Gases (GHGs) released during the transportation of waste and recyclables and during the recycling process.
- Decreases in litter associated with disposable bottles along both inner canyon and rim trails as well as below the rim. (Per NPS custodial/waste management staff, plastic bottles (and associated litter) are one of the top two sources of litter along Rim Rock Drive, rim trails, and litter found in the bottom of the park's canyons).
- Decreases in risk to park staff and volunteers as below the rim litter removal can require technical skills and increased risk.
- Reduces risk of plastic bottle ingestion by birds, rodents, and larger mammals.
- Diminishes release of toxic chemicals such as bisphenol A (BPA). Toxins leached from plastics are known to have negative effects on wildlife.

Decreases the amount of litter along the canyon rims and roadside is also unsightly for visitor enjoying the natural beauty throughout the park.

**Cons:**

- Bottled water is a high profit margin item for Colorado National Monument Association (CNMA). If reusable bottle sales (lower profit margin) do not make up for this, CNMA could incur some financial loss. (See #6 for additional analysis).
- Some people perceive a risk to visitors of dehydration. (Bottled water is a relatively recent retail innovation and this concern had been well addressed before its advent. Water filling stations have been placed in the campground, picnic areas, and visitor center. Reusable bottles starting at prices just a few cents above the cost of one disposable bottle of water are being sold at the visitor center by the CNMA.

2. **Infrastructure Costs and funding source(s)** for filling stations was completed in 2012. Total construction cost was \$10,000. Funding sources included a donation from the Colorado National Monument and base funding.

3. **Contractual implications on CNMA** is not an issue. The Colorado National Monument Association has been involved in the discussions of removal and is supportive of discontinuance of bottled water sales.

4. **Operational costs** of filling stations including utilities and regular public health testing. The park estimates that it will spend about \$85 a year on each filling station, which includes switching their operation from fall/winter to winter/spring and water quality sampling. With a total of three fill stations, that is a total of \$255 per year.

5. **Cost and availability of BPA-free reusable containers:** The lowest priced reusable bottle is sold by CNMA is \$2.99; and is BPA-free. CNMA also sells a variety of BPA-free, reusable, souvenir bottles at a range of prices. Bottled water in the park starts at approximately \$1.50 per bottle.

6. **Effect on CNMA Sales Revenue:** Sales information for our CNMA is provided below. Our belief, is that CNMA will not have a substantial loss in gross sales revenue as individual plastic water bottle sales will be replaced by reusable water bottle sales.

Colorado National Monument in partnership with the Colorado National Monument Association has installed water filling stations at four different locations including two at the park's visitor center. The park and CNMA staff does not know how many people have brought in their own bottles to be filled. However, the park has received numerous compliments on the new fill stations and our effort to reduce plastic waste. New signs have been posted near the fill stations to help direct visitors to the fill stations.

CNMA has the approval of their Board of Directors to voluntarily discontinue the sale of bottled water in 2013. The following is a summary of their bottled water sales: Colorado National Monument Association.

*The following is a summary of the water bottle sales by CNMA for 2011 and 2012*

**2011 Total Sales of Disposable Water Bottles**

3180 bottles sold Total Sales: of H2O = \$4,503 Total sales \$319,405 and percentage of total sales: 1.4%

Refillables 2011: #1209 stainless—qty. 60, \$891

**2012 Total Sales of Disposable Water Bottles Sold**

3,321 bottles sold Total Sales: of H2O = \$4,668 Total sales \$291,068 and percentage of total sales: 1.6%

2012 Grand Total Refillable bottles number of bottles: 212 \$2,482.65

7. **Availability of water within concessioner food service operations:** NO food service operations in COLM

8. **Visitor Education in the park and on line so that visitors may come prepared with their own water bottles:**

Within the park, information about the filling stations and reusable water bottle promotion will be available in the park's 2013 Visitor Guide – The Guide and on all new filling stations. Information will be posted at the entrance stations, campground and visitor center.

Information will be posted on the park's Content Management System under Planning Your Visit and on the home page. The CNMA will also post information on their website to share this information with park visitors and local community members.

Information on the ban of individual disposable water bottles will be put out to the media in a news release in February 2013 and will be posted on the park's News Release page.

**9. Results of consultation with NPS Public Health Office.** The type of fill stations purchased do not pose any new health issues for the park. The Public Health Office (Joseph Winkelmaier) reviewed the design of the water filling stations, commented on placement of the stations to meet public needs and all aspects were found to be satisfactory. The NPS Public Health Office is fully supportive of this ban, as any concerns about public safety have been addressed.

**10. A sign plan so that visitors can easily find filling stations has been implemented.** There is currently signage in place at all of the water filling stations within the park.

Colorado National Monument's interpretive staff has also designed informational signs at the visitor center's water filling station to educate the public about the environmental benefits of refilling water bottles.

**11. Safety considerations for visitors who may resort to not carrying enough water or drinking from surface water sources with potential exposure to disease**

Fill station locations were chosen specifically to provide immediate water access to the largest number of people who might have an immediate need.

All trailheads have information signs encouraging visitors to carry water.

**12. A system for annual evaluation of the program, including public response, visitor satisfaction, buying behavior, public safety, and plastic collection rates**

On an annual basis the park would monitor and collect the following data:

- Visitor satisfaction/public response by using the visitor comment forms – log in complaints/compliments (Public Response and Visitor Satisfaction).
- Visitor and Resource Protection Staff – will continue to track incidents/contacts related to water availability and dehydration (Public Safety).
- Safety Officer/NPS Public Health Representative will keep a log of any safety issue related to water availability. (Public Safety).
- CNMA will track sales of reusable water bottles (Buying Behavior).
- Interpretation will track sales with CNMA (Buying Behavior).
- Maintenance will track collection rates (Collection Rates).

A position in the park will be designated as the "project manager" to collect all of the data and evaluate the data on an annual basis.

**13. Results of consultation with CNMA.** Consultation with CNMA began on an informal scale in January 2011. These discussions included the development of alternative products that are both sustainable and affordable (various price points) in order to allow the organizations an opportunity to recoup revenue currently associated with bottled water sales.

On January 2, 2013, a letter was sent to CNMA stating that new water filling stations had been installed and that the NPS would no longer allow the sale of water in plastic bottles within park boundaries after March 31, 2013 (See attached letter).

CNMA has the approval of their Board of Directors to voluntarily discontinue the sale of bottled water in 2013. The following is a summary of their bottled water sales: Colorado National Monument Association.

**14. Timeline of phase in period:** By May 2012, CNMA broadened their line of reusable bottles to include a variety of choices at a variety of price points. During the summer 2012, CNMA began discontinuing further purchase and stocking of plastic water bottles; during Spring 2013, information about the park's voluntary reusable water bottle program will be distributed to media outlets and park staff once there is regional approval (other notifications include the park's web site, so that visitors will be informed of their options and the environmental benefits of their choices).

In December of 2011, NPS Director Jarvis issued a service wide policy on management of disposable plastic water bottles in parks. This new policy allowed for elimination of the sale of water packaged in disposable plastic bottles with the approval of the appropriate Regional Director. After performing the required assessment of the potential impacts and effects of a disposable water bottle ban, Colorado National Monument submitted a request for approval in January 2013.

If approved, the park would immediately inform the Colorado National Monument Association of the forthcoming ban on the sale of water in individual disposable containers, and would coordinate with CNMA to ensure they could sell, transfer or return any product they already have in stock. Ideally, the ban would take effect 30 days from approval.





# United States Department of the Interior



NATIONAL PARK SERVICE  
Fort Laramie National Historic Site  
965 Gray Rocks Road  
Fort Laramie, WY 82212

In reply to

## Memorandum

To: Regional Director, Intermountain Region  
Through: Deputy Regional Director, Intermountain Region  
From: Superintendent, Fort Laramie National Historic Site  
Subject: Request for Approval to Eliminate the Sale of Water in Disposable Plastic Bottles

FOLA is modifying the drinking fountain in the Commissary Storehouse Visitor Center and the Cavalry Barracks to enable users to fill reusable water bottles. The park has worked closely with the Fort Laramie Historical Association (the vendor of bottled water) to facilitate a smooth transition from selling disposable plastic bottles to producing and marketing reusable bottles only.

In compliance with the policy memorandum issued by the Director on December 14, 2011, an attached analysis on potential impacts of the program to switch from sales of disposable bottled water to reusable bottles and seeks your approval to continue its implementation.

Recommend Concurrence:

  
Laura E. Joss, Deputy Regional Director

NOV 12 2015

Concur:

  
Sue E. Masica, Regional Director

NOV 12 2015

## Fort Laramie National Historic Site

### Analysis of potential impacts from switching to the sale of reusable water bottles from disposable bottles.

#### 1. Elimination of waste and the overall pros/cons to park operations.

Fort Laramie National Historic Site (FOLA) could significantly eliminate overall waste and aid in the park's recycling program. The park transports its recycling material 50 miles round-trip to the nearest recycling facility; it is estimated that the number of recycling runs will be reduced by at least 30% with the elimination of disposable bottles. Eliminating plastic water bottles would certainly reduce the park's overall waste and create a more sustainable solid waste/recycling management plan.

#### Pros:

- Although the park has undertaken an aggressive approach to recycling, plastic bottles often end up at the landfill. The percentage of bottles arriving at that facility would be greatly reduced with the discontinuation of bottled water sales and the adoption of a reusable water bottle policy.
- We can expect to see that the average visitor who buys multiple bottles of water will alternatively purchase a reusable bottle. This bottle can be filled multiple times and over a brief period (even after the visitor leaves the park) will garner the visitor savings.
- There will be a reduction of Green House Gases (GHC's) and carbon footprint expended during transport and processing of waste and recyclables.
- There will be reductions in time and labor in handling waste and recyclables by Facility Management staff.
- There will be a reduction in litter associated with disposable bottles.
- Wildlife will be more responsibly protected: birds, rodents, and mammals are often enticed to plastic bottles, perhaps believing they contain either food or water whereby they will inadvertently swallow pieces of the container. It is well documented that these pieces can cause wildlife to choke and create blockages in the digestive tract when ingested.
- It will reduce the release of toxic chemicals that plastics are known to contain, and which have a negative impact on wildlife.

### Cons:

- Bottled water has a high profit margin for the Fort Laramie Historical Association (FLHA). If sales of reusable bottles do not come into line with the profits of bottled water, FLHA could incur a significant financial loss (see #6 for analysis of sales). Nevertheless, FLHA is supporting the park in its elimination of bottled water.
- Risk of visitor dehydration. (Widespread use of bottled water has occurred within a relatively short time and historical accounts do not show this to be a significant problem. These concerns were well-managed before the advent of bottled water by placing drinking fountains at strategic locations. In addition, reasonably priced reusable bottles will offer a way for visitors to stay hydrated at a relatively low cost.)

### **2. Infrastructure costs and funding source(s) for filling stations**

FOLA will be replacing the aforementioned drinking fountains with Elkay EZH2O (EZS8WSLK) refillable stations. We anticipate the number on refills to be 1,000 bottles per year.



**Elkay EZS8WSLK EZH2O Barrier Free 8 GPH  
Water Cooler with Bottle Filling Station  
(Refrigerated Drinking Fountain)**

The purchase and installation costs of the water stations are being paid from park operational funds. Total cost is estimated to be \$6,320.00, including the units, parts, and labor for installation and infrastructure modifications within the two designated historic structures.

### **3. Contractual implications on concessioners, including considerations of new leaseholder surrender interest or possessory interest**

Bottled water is exclusively sold by FOLA's cooperating association, FLHA. The association operates under an agreement with the NPS; therefore, there is no contract or possessory interest for consideration.

#### **4. Operational cost of filling station, utilities and public health testing.**

The estimated annual cost of maintaining and operating each filling station is negligible. Utility costs should prove to be insignificant as the park maintains and operates its own well. In addition, water testing by park staff is a current core park operation.

#### **5. Providing a reasonable alternative, the cost and availability of BPA-free reusable containers.**

FLHA is offering reusable bottles for visitors to purchase. It seems that when visitors are given reasonable alternatives, the financial impact, when given the choice between disposable and reusable containers, should prove to be negligible in terms of sales. This trend is more likely to carry on as FLHA continues to look at reasonable alternatives.

#### **6. Impact to cooperating association of revenue derived from sale of bottled water**

On average, FLHA sales of disposable water bottles here at FOLA are 500 bottles per year. Based on the information provided by FLHA on water sales here at FOLA, it can be expected that any loss in gross sales as a result of implementation of this program will be inconsequential. The expectation is contingent on the fact that sales of reusable bottles will continue to increase as the sale of disposable bottles is eliminated.

#### **7. Availability of water by concessioner with food operations**

FOLA does not have a concessioner and/or food operations

#### **8. Educating visitors to the park to bring along their own water bottle to the park.**

Having already installed the water filling station indicates the public's willingness to adopt a program of filling reusable bottles for water. The park will continue to facilitate this trend by providing relevant information to the public on how our program to eliminate disposable bottles is progressing and when it is fully implemented. This will give the visitor full notification of suggested items visitors should have prior to visiting the park. Park staff will disseminate this information to the public through printed material, website, social media, and orally. All staff will be notified of the implementation so that they may readily share it with visitors.

#### **9. Results of consultation with NPS Public Health Office**

There are no public health concerns associated with this type of drinking fountain/water bottle filling station since it is connected directly to, and only to, the potable water system from the private well that services the park. In accordance with that consultation, the park's maintenance staff will develop a routine cleaning procedure in conjunction with its biweekly water testing procedures.

#### **10. Sign plan enabling visitors to find filling station with ease**

The filling stations will be strategically located immediately inside the door to the Visitor Center and in the hallway of the park's accessible restrooms, both of which are found with little or no additional direction. If necessary, staff is always available to assist visitors in locating the station.



# United States Department of the Interior

NATIONAL PARK SERVICE  
GRAND CANYON NATIONAL PARK  
P.O. BOX 129  
GRAND CANYON, ARIZONA 86023-0129



IN REPLY REFER TO:  
C38 (GRCA 8211)

FEB 01 2012

## Memorandum

To: Regional Director, Intermountain Region  
From: Superintendent, Grand Canyon National Park  
Subject: Request for Approval to Eliminate the Sale of Water in Individual Disposable Containers

On December 14, 2011, Director Jarvis issued policy on the recycling and reduction of disposable plastic water bottles in parks. The policy stated "Where appropriate, superintendents may request approval from their regional director to eliminate the sale of water in disposable plastic bottles by analyzing and addressing the following factors – in writing." By copy of this memorandum, Grand Canyon National Park (GRCA) is requesting approval to eliminate the sale of water in individual disposable containers (under one gallon), such as plastic water bottles and boxed water.

Grand Canyon National Park has experienced an increasing amount of litter associated with disposable plastic bottles along trails both on the rim and within the inner canyon. These bottles are also the largest contributor to litter in the area where items blow and fall below the rim, an area that can be dangerous to access and clean. In addition, waste associated with disposable bottles has become a significant part of the park's waste stream, comprising an estimated 20% of the park's overall waste stream and 30% of the park's recyclables.

Significant environmental and monetary costs are associated with the removal of litter, transport of waste and recyclables, disposal of non-biodegradable plastics in landfills, and recycling of plastics. As a fiscally responsible, Climate Friendly Park, GRCA is interested in minimizing all of these costs and believes that the most effective way to do so would be to eliminate the sale of water packaged in individual disposable containers (of less than one gallon).

While we realize that a ban on the sale of water in disposable containers is only one of the actions that can be taken, the park has already implemented a robust recycling program (currently, about 35% of the park's waste stream is diverted to recycling, and our goal is to increase that percentage to 50%); and over the last year, we have engaged in an education program intended to increase visitor use of refillable water bottles and decrease dependence on water sold in disposable plastic bottles. While the sales numbers included in our impact analysis indicate that these efforts have been successful, the dramatic increase in Grand Canyon Association's (GCA) sales of reusable water bottles after they voluntarily discontinued the sale of bottled water indicates to us that far greater success can be achieved by eliminating the sale of water in disposable containers throughout the park while still providing a safe and enjoyable experience.

For these reasons, we respectfully request permission to eliminate the sale of water packaged in individual disposable containers of less than one gallon in GRCA. Attached please find the required analysis of the

TAKE PRIDE  
IN AMERICA 

### **11. Safety considerations for visitors who may not carry enough water or drink water from surface water sources which carry a potential exposure to disease**

Visitors are never more than 100 yards from either the new filling stations or a traditional drinking fountain, which are located throughout the park. Visitors using trails are advised orally and on bulletin boards as to the lack of drinking water and the need to carry water at all times. Even then, they are never more than a mile from their vehicle. The practice of notification in these areas will continue and will be increased through appropriate signage if it is deemed necessary. Because of the arid nature of the area, it is rare to find surface water along the trail; the rivers' water is naturally colored such that it is unlikely visitors would drink from them, and the possibility of exposure to disease from such a source is extremely limited.

### **12. A system for annual evaluation of the program, including public response, visitor satisfaction, purchasing behavior, public safety, and plastic collection rates**

Park management will conduct an annual evaluation of the program by analyzing data collected through:

- Visitor satisfaction/public response collected from comment forms, annual satisfaction surveys, and logs of complaints/compliments made directly to staff in the Visitor Center;
- Consultations with the Zone Safety Officer and issues related to water availability; and
- FLHA will continue to analyze sale patterns.

### **13. Results of consultations with concessioners and cooperating association**

Consultations with FLHA staff here at FOLA have been continuous from initial discussions as to the potentiality of eliminating disposable water bottles. These consultations have led to the sale of reusable bottles that are acceptable to both parties. As a result, an agreement was reached on the elimination of disposable bottled water sales. Throughout the process, both parties have been committed to finding a common vision and have worked together in implementing a viable program.

### **14. Timeline of phase in period**

The phase-in period of action is well under way and the park awaits the approval by the NPS-IMRO for continued implementation. Reusable bottles are the shelf and the drinking stations will be installed this winter. It is expected that full implementation of the program will show an overall benefit to the public, park, and cooperating association.

potential impacts/effects of a ban on the sale of water in individual disposable containers in the park per the Director's policy memorandum.

Attachments

Concur: John Wessels

Date: 2/2/12

## Grand Canyon National Park Analysis of potential impacts/effects of bottle ban

### I. Amount of waste eliminated and pros/cons to overall park operations

By volume, Grand Canyon National Park (GRCA) could eliminate up to 30% of what is currently recycled and up to 20% of the park's overall waste stream. GRCA custodial staff and Norton Environmental (the park's recycling contractor) agree that disposable plastic bottles (all bottles, not just water) comprise about 30% of the park's recyclables, **by volume**. In fiscal year 2010, the park recycled more than 900 tons.

#### Pros:

- Decreases in plastics going to the landfill (although about 35% of the park's waste stream is currently diverted to be recycled, it is estimated by the waste management staff that about 50% of what is taken to the landfill could also be recycled).
- Decreases in monetary costs to any visitor who would have purchased more than one bottle of water within the park; and if our education efforts are successful, visitors may save additional money as they continue to refill their reusable bottles after they leave the park.
- Savings of resources used and Green House Gases (GHCs) released during the transportation of waste and recyclables and during the recycling process.
- Decreases in litter associated with disposable bottles along both inner canyon and rim trails as well as below the rim. (Per NPS custodial/waste management staff, plastic bottles (and associated litter) are one of the top two sources of litter along rim trails).
- Decreases in risk to park staff and volunteers as below the rim litter removal can require technical skills and increased risk.
- Reduces risk of plastic bottle ingestion. Birds, rodents, and larger mammals are known to be attracted to plastic bottles. Thinking there is food/water inside, animals chew and inadvertently swallow plastic pieces. It is well documented that ingested plastic can become lodged in throats and choked on and/or accumulates and creates blockages in digestive tracks.
- Diminishes release of toxic chemicals such as bisphenol A (BPA). Toxins leached from plastics are known to have negative effects on wildlife.

#### Cons:

- Bottled water is a high profit margin item for the park concessioners and partners. If reusable bottle sales (lower profit margin) do not make up for this, concessioners and partners could incur some financial loss. (See #6 for additional analysis).
- Some people perceive a risk to visitors of dehydration. (Bottled water is a relatively recent retail innovation and this concern had been well addressed before its advent. Water filling stations have been placed at primary trailheads and reusable bottles starting at prices just a few cents above the cost of one bottle of water are being sold in retail outlets throughout the park. With these, water is now more readily available at the Hermit, Bright Angel and North/South Kaibab Trailheads, as well as along the most visited portions of the Rim Trail than it ever was before).
- As GRCA encourages visitors to use the park's water, the annual turbidity event (spring runoff) could pose perception issues regarding safety of water. (We are placing information on this in the spring Guide and have begun discussions on the need for informational signs at the filling stations during this event each year).



**2. Infrastructure Costs and funding source(s) for filling stations**

Grand Canyon National Park began construction of ten new water filling stations in FY 2010, and all were completed in FY 2011. Total construction cost was \$288,900. Funding sources included concessions franchise fees and base funding received from Intermountain Region Office (IMRO) at the end of FY 2010. Park concessioners have also installed three additional water bottle fillings stations and adapted various water fountains to allow for reusable water bottle filling.

**3. Contractual implications on concessioners, including considerations of new leaseholder surrender interest or possessory interest**

Sec 3(d) of the concessions contracts for Xanterra South Rim, LLC (Xanterra), DNC Parks and Resorts at Grand Canyon, Inc. (DNC) and Grand Canyon North Rim, LLC. (Forever Resorts) states: "The Director reserves the right to determine and control the nature, type and quality of the visitor services described in this Contract, including, but not limited to, the nature, type and quality of merchandise, if any, to be sold or provided by the concessioner within the Area."

Xanterra is the park's biggest seller of bottled water and their initial contract term was set to expire on December 31, 2011. The concessioner is under a one year amendment set to expire on December 31, 2012. DNC is under the final year of the current contract which is set to expire on December 31, 2012. Forever Resorts contract expires on December 31, 2017.

DNC has installed two water filling stations and has not requested leasehold surrender interest (LSI). Xanterra has installed one filling station in the Maswik Cafeteria remodel and did not request LSI for this installation.

All concessioners have been involved in the discussions of removal and are supportive of discontinuance of bottled water sales.

**4. Operational costs of filling stations including utilities and regular public health testing**

The park estimates that it will spend about \$85 a year on each filling station, which includes switching their operation from fall/winter to winter/spring and water quality sampling. With a total of 10 stations, that is a total of \$850 per year.

**5. Cost and availability of BPA-free reusable containers:**

The lowest priced reusable bottle is sold by DNC and it is \$1.99; and is BPA-free. All concessioners and cooperators sell a variety of BPA-free, reusable, souvenir bottles at a range of prices. Bottled water in the park starts at approximately \$1.49 per bottle.

**6. Effect on concessioner and cooperating association sales revenue**

Sales information for our South Rim concessioners and our cooperating association are provided below. Our belief, which is supported by the following GCA data, is that concessioners will not have a substantial loss in gross sales revenue as the individual plastic water bottle sales will be replaced by reusable water bottle sales.

DNC

DNC has two outlets within the park (Market Plaza and Desert View) and they have installed water filling stations within these facilities. They continue to sell bottled water and in addition have sold 9765 refillable water bottles year to date (YTD). They do not know how many people have brought in their own bottles to be filled. They provide signage on the doors of the facilities directing guest to the filling stations. Currently DNC has two vending machines at the visitor center and bottled water is available from the machines.

Below is the 5-year trend that DNC has seen in bottled water sales:

| <i>Water Sales 2007-2011</i>  |              |              |              |              |           |
|-------------------------------|--------------|--------------|--------------|--------------|-----------|
|                               | 2007         | 2008         | 2009         | 2010         | 2011 YTD  |
| <i>Gross Dollars (Retail)</i> | \$226,666.00 | \$351,577.00 | \$202,807.00 | \$181,825.00 | \$208,492 |
| <i>Units</i>                  | 112,546      | 168,495      | 83,332       | 72,366       | 88,450    |

2008 = Record Sales

2009 = Economy down trend

2011 YTD = 12-06-11

Xanterra

Xanterra is the largest provider of bottled water in the park. According to their records, Xanterra has seen sales for bottled water flatten out in the last three years. Within the last year, they have also seen an increase in the number of reusable water bottles being filled and a decrease in the sales of bottled water. This trend was noticeable prior to construction of the water filling stations. Xanterra does have twenty-eight vending machines around the facilities; and bottled water is available from four of these machines.

Below is the 3-year trend that Xanterra has seen in the sale of bottled water and water bottles:

**GCSR - Bottled Water and Refillable Water Bottle Sales by Units Sold**

| Retail 2009   |         | Retail 2010   |         | Retail 2011   |         | % Up/Down from 09 |
|---------------|---------|---------------|---------|---------------|---------|-------------------|
| Bottled Water | 62,000  | Bottled Water | 58,000  | Bottled Water | 29,000  |                   |
| Water Bottles | 2,250   | Water Bottles | 5,100   | Water Bottles | 10,500  | 366.67%           |
| F&B 2009      |         | F&B 2010      |         | F&B 2011      |         |                   |
| Bottled Water | 95,400  | Bottled Water | 90,600  | Bottled Water | 80,550  | -15.57%           |
| Total 2009    |         | Total 2010    |         | Total 2011    |         |                   |
| Bottled Water | 157,400 | Bottled Water | 148,600 | Bottled Water | 109,550 | -30.40%           |
| Water Bottles | 2,250   | Water Bottles | 5,100   | Water Bottles | 10,500  | 366.67%           |

**Grand Canyon Association**

GCA has seven retail outlets within GRCA. All of the retail outlets began selling bottled water in April 2007. The association, with the approval of their Board of Directors, voluntarily discontinued the sale of bottled water in June 2011. The following is a summary of their bottled water sales:

| Qty Sold       | Total Sales          |                    |
|----------------|----------------------|--------------------|
| 33,628         | \$ 50,154.91         | 2007 Total         |
| 41,012         | \$ 60,529.04         | 2008 Total         |
| 35,941         | \$ 53,823.47         | 2009 Total         |
| 39,734         | \$ 77,580.64         | 2010 Total         |
| <u>9,898</u>   | <u>\$ 19,406.15</u>  | <u>2011 Total</u>  |
| <b>160,213</b> | <b>\$ 261,494.21</b> | <b>Grand Total</b> |

The following is a summary of the water bottle sales by GCA for 2010 and 2011 (May 1<sup>st</sup> to November 7<sup>th</sup>)

| Description                           | 2010         |                     | 2011          |                      |
|---------------------------------------|--------------|---------------------|---------------|----------------------|
|                                       | Qty Sold     | Total Sales         | Qty Sold      | Total Sales          |
| Bottle Stainless Steel 20 oz Total    | 35           | \$ 554.85           | 362           | \$ 3,938.78          |
| Bottle Stainless Steel 25 oz Total    | 2,774        | \$ 46,278.57        | 4,118         | \$ 61,609.64         |
| Flip Top Stainless Bottle Total       | 0            | \$ -                | 13            | \$ 201.92            |
| Bottle Recycle Refill 18 oz Total     | 0            | \$ -                | 2,984         | \$ 11,815.57         |
| Bottle Recycle Refill 27 oz Total     | 0            | \$ -                | 2,986         | \$ 17,746.43         |
| Bottle Geologic Cross Section Total   | 0            | \$ -                | 863           | \$ 12,623.73         |
| Celebration of Art Bottle Total       | 93           | \$ 1,184.30         | 39            | \$ 499.88            |
| Membership Bottle Total               | 124          | \$ 1,483.94         | 142           | \$ 1,696.96          |
| <b>Grand Total Refillable bottles</b> | <b>3,026</b> | <b>\$ 49,501.66</b> | <b>11,507</b> | <b>\$ 110,132.91</b> |

**7. Availability of water within concessioner food service operations**

All restaurants within the park provide (non-bottled) water at the table on request. All cafeterias have water available at their beverage service stations. In addition, Xanterra has added a filling station at Maswik Lodge at their cafeteria and has converted an existing faucet to a bottle filling spigot at Yavapai Lodge along with many other drinking fountains.

**8. Visitor Education in the park and on line so that visitors may come prepared with their own water bottles**

Within the park, information about the filling stations and reusable water bottle promotion is currently available in the park newspaper – *The Guide* and on all new filling stations. Placards with abbreviated information are almost completed for the park's shuttle fleet. A site bulletin is being completed on the water filling stations and will be made available on-line and throughout the park. The NPS and concessioner staff within the park have been provided with information about the program (via e-mail) and encouraged to share this information with park visitors.

Externally, information on the voluntary program was put out to the media in a news release in March 2011 and is posted on the park's News Release page. If the park implements a ban on individual disposable container water sales, a news release would again be sent to local and national media

outlets, posted on the park's news release page, and would be tweeted. In addition, the park has a web page dedicated to the filling stations and the reusable water bottle program. This site would be updated to reflect that water in individual disposable containers is no longer sold within the park; and a link to the filling station/ ban page would be featured on the park's home page to ensure easy access to information about the change.

#### **9. Results of consultation with NPS Public Health Office**

The park has incorporated numerous consultation meetings with the NPS Public Health Office. The Public Health Office reviewed the design of the water filling stations, commented on placement of the stations to meet public needs and all aspects were found to be satisfactory. The NPS Public Health Office is fully supportive of this ban, as any concerns about public safety have been addressed.

#### **10. A sign plan so that visitors can easily find filling stations**

There is currently signage in place at all of the water filling stations within the park. The NPS has standardized signs on all NPS operated filling stations (attached photo). In addition, placards will soon be displayed in all of the park's free shuttle buses (draft attached), the water filling stations are clearly marked on the park map in *The Guide*, and a site bulletin is in final review.

DNC has well designed informational signs at their water filling stations that educate the public about where our water comes from and the environmental benefits of refilling water bottles. In addition, DNC has signs on each entrance door directing visitors to the filling stations (attached photos). Xanterra has signage in place, as well (attached photo).

GCA has signage in their stores which provides educational information on the environmental benefits of refilling water bottles (attached photos).

#### **11. Safety considerations for visitors who may resort to not carrying enough water or drinking from surface water sources with potential exposure to disease**

Filling station locations were chosen specifically to provide immediate water access to the largest number of people who might have an immediate need. Due to the difficult terrain and desert nature of Grand Canyon's backcountry, very few inexperienced hikers (or others likely to hike with bottled water rather than hydration packs and/or "Nalgene" bottles and water filters) venture onto non-corridor trails. All corridor trailheads now have a filling station. The trail with the largest probability of inexperienced and under-prepared hikers venturing onto it now has a filling station at the trailhead in addition to the spigots that had already been available about every 1.5 miles for the first 4.5 miles of the trail. In addition, the park's Preventative Search And Rescue (PSAR) staff focuses a great deal of their efforts on this trail.

#### **12. A system for annual evaluation of the program, including public response, visitor satisfaction, buying behavior, public safety, and plastic collection rates**

On an annual basis the park would monitor and collect the following data:

- Visitor satisfaction/public response by using the visitor comment forms – log in complaints/compliments (Public Response and Visitor Satisfaction).
- PSAR/Canyon District – staff will continue to track incidents/contacts related to water availability and dehydration (Public Safety).

- Safety Officer/NPS Public Health Representative will keep a log of any safety issue related to water availability. (Public Safety).
- Concessions will track sales with Xanterra, DNC and Forever (Buying Behavior).
- Interpretation will track sales with GCA (Buying Behavior).
- Maintenance will track collection rates with input from our contracted carrier (Collection Rates).

A position in the park will be designated as the "project manager" to collect all of the data and evaluate the data on an annual basis.

### 13. Results of consultation with concessioners and cooperating associations

Consultation with the three concessioners located in the park and the cooperating association began on an informal scale in January 2010. These discussions included the development of alternative products that are both sustainable and affordable (various price points) in order to allow the organizations an opportunity to recoup revenue currently associated with bottled water sales.

On May 12, 2010, letters were sent to the three concessioners and GCA stating that water filling stations were being constructed and that the NPS would no longer allow the sale of water in plastic bottles within park boundaries after December 31, 2010 (See attached letter).

On December 22, 2010, letters again were sent to the concessioners informing them that the park's planned initiative for discontinuing the sale of water in plastic bottles had been temporarily delayed. This letter also stated that they could continue to sell bottled water, however they were advised that sales would likely be discontinued in the near future (See attached letter).

GCA voluntarily decided to sell out the bottled water they had in stock and not restock it. They carry a variety of reusable water bottles and their staff verbally promotes the program. Their sales of reusable water bottles have jumped dramatically this year.

DNC installed filling stations in both of their markets and designed well-done informational signs to go with them. They stock a variety of reusable bottles including the park's lowest priced bottle at \$1.99.

Xanterra installed a new filling station in the Maswik Lodge cafeteria during a rehab project and has been converting existing water fountains and cafeteria water sources to include bottle friendly spigots. Xanterra carries a variety of reusable water bottles and say that they have seen marked increases in their sale this year as shown in the data above.

### 14. Timeline of phase in period

By January 2011, all concessioners and the park's cooperating association had broadened their lines of reusable bottles to include a variety of choices at a variety of price points. Also early in 2011, information about the park's voluntary reusable water bottle program was distributed to media outlets and park staff, as well as posted on the park's web site, so that visitors could be informed of their options and the environmental benefits of their choices. By mid-summer 2011, all but one of the new filling stations in the park was on-line. (One fillings station was added to the original plan at a later date. Most of the filling stations have experienced heavy use since they were installed.)

In December of 2011, NPS Director Jarvis issued a service wide policy on management of disposable plastic water bottles in parks. This new policy allowed for elimination of the sale of water packaged in disposable plastic bottles with the approval of the appropriate Regional Director. After performing the required assessment of the potential impacts and effects of a disposable water bottle ban, GRCA submitted a request for approval in January 2012.

If approved, the park would immediately inform concessioners and cooperators of the forthcoming ban on the sale of water in individual disposable containers, and would coordinate with concessioners and cooperators to ensure they could sell, transfer or return any product they already have in stock. Ideally, the ban would take effect 30 days from approval.



United States Department of the Interior

*Lucy*

NATIONAL PARK SERVICE  
Pecos National Historical Park  
P.O. Box 418  
Pecos, NM 87552



In reply to:

**NOV 05 2013**

Memorandum

To: Acting Regional Director, Intermountain Region  
Through: Acting Deputy Regional Director, Intermountain Region  
From: Superintendent, Pecos National Historical Park /s/  
Subject: Request for Approval to Eliminate the Sale of Water in Disposable Plastic Bottles

We have modified the drinking fountain in the E.E. Fogelson Visitor Center to enable users to fill reusable water bottles. The park has worked closely with Western National Parks Association (the vendor of bottled water) to facilitate a smooth transition from selling disposable plastic bottles to producing and marketing reusable bottles only.

In compliance with the policy memorandum issued by the Director on December 14, 2011, an attached analysis on potential impacts of the program to switch from sales of disposable bottled water to reusable bottles seeks your approval to continue its implementation.

Recommend Concurrence: *Mary Risser*  
Mary Risser, Acting Deputy Regional Director

Concur: *Laura E. Joss* 11/5/13  
Laura E. Joss, Acting Regional Director

## Pecos National Historical Park

### Analysis of potential impacts from switching to the sale of reusable water bottles from disposable bottles.

#### 1. Elimination of waste and the overall pros/cons to park operations.

The Pecos National Historical Park (PECO) could significantly eliminate overall waste and aid in the park's recycling program. Of the 1.79 tons of material recycled by the park in Fiscal Year 2012, approximately 25% was comprised of disposable plastic bottled water or other plastic containers. This is especially true during the summer months when park visitation is at its peak and when the overwhelming majority of bottles are sold. Eliminating plastic water bottles would certainly reduce the park's overall waste and create a more sustainable solid waste/recycle management plan.

#### Pros:

- Although the park has undertaken an aggressive approach to recycling, plastic bottles inevitably still end up at the landfill. The percentage of bottles getting to this point would be greatly reduced with the discontinuation of bottled water sales and the adoption of a reusable water bottle policy.
- We can expect to see that the average visitor who buys multiple bottles of water will alternatively purchase a reusable bottle. This bottle can be filled multiple times and over a brief period (even after the visitor leaves the park) will garner the visitor savings. Visitors may be inclined to spend funds on other items from the association.
- Reduction of Green House Gases (GHG's) and savings of resources used during transport and process of waste and recyclables.
- Reduction in time and labor in handling waste and recyclables by Facility Management staff.
- Reduction in litter associated with disposable bottles.
- Protection of wildlife, birds, rodents, and mammals are often enticed to plastic bottles perhaps believing they contain either food or water whereby they will inadvertently swallow pieces of the container. It is well documented that these pieces can cause wildlife to choke and create blockages in the digestive tract when ingested.
- Reduce the release of toxic chemicals that plastics are known to contain, which have a negative impact on wildlife.

#### Cons:

- Bottled water has a high profit margin for the Western National Parks Association (WNPA). If sales of reusable bottles do not come into line with the profits of bottle water, WNPA

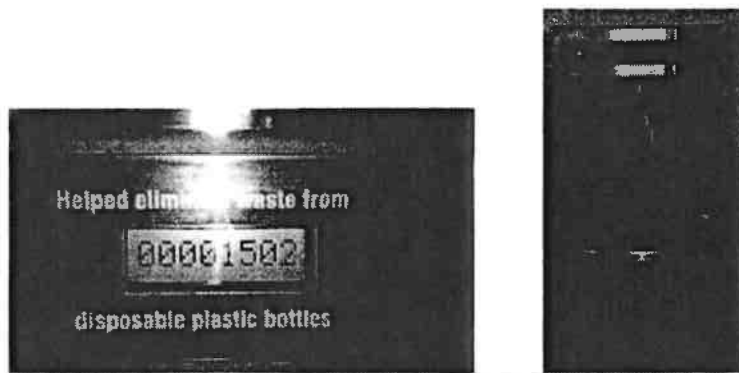


would incur a significant financial loss (see #6 for analysis of sales). Nevertheless, WNPA is supporting the park in its elimination of bottled water.

- Risk of visitor dehydration. (Widespread use of bottled water has occurred within a relatively short time and historical accounts do not show this to be a significant problem. These concerns were well managed before the advent of bottled water by placing drinking fountains at strategic locations. In addition, reasonably priced reusable bottles would offer a way for visitors to stay hydrated at a relatively low cost.)

## **2. Infrastructure costs and funding source(s) for filling stations**

PECO has replaced the drinking fountain in the EE Fogelson Visitor Center with an Elkay EZH<sub>2</sub>O refillable station and its use has been increasing since its installment. The current number on refills at this time is 1502 bottles.



The cost and installation of the water station was paid for from park operational funds. Total cost for unit and installation amounted to \$2,000. Cost includes labor for the installation and modification.

## **3. Contractual implications on concessioners, including considerations of new leaseholder surrender interest or possessory interest**

Bottled water is exclusively sold by PECO's cooperating association WNPA. The association operates under an agreement with the NPS; therefore, there is no contract or possessory interest for consideration.

## **4. Operational cost of filling station, utilities, and public health testing.**

It is estimated that the annual cost of \$70 would maintain and operate the filling station. The estimation includes the purchase and installation of a new filter. Utility costs should prove to be insignificant as the park maintains and operates its own well. In addition, water testing by park staff is already a core of park operations.

## **5. Providing a reasonable alternative, the cost and availability of BPA-free reusable containers.**

WNPA is offering reusable bottles for visitors to purchase. Currently, there is a \$2.99 28 oz Jr. Ranger bottle and a \$12.00 32 oz Nal-gene bottle that carries the park logo. Both bottles are BPA-free, and sales of these items have steadily increased since their introduction. In addition, evidence of their use is seen above in the number of refills at the fountain. Currently 16.9 oz disposable bottles

of water with the park logo are priced at \$1.99. It would seem apparent that when visitors are given alternatives, at a reasonable price, the choice between disposable and reusable containers could prove to be negligible in terms of sales. This trend is more likely to carry on as WNPA continues to look at reasonable alternatives.

#### **6. Impact to cooperating association of revenue derived from sale of bottled water**

On average WNPA sales of disposable water bottles here at PECO are 950 bottles. Sales of bottled water are at a high point during the summer season when, for example, 593 bottles were sold in the third quarter of 2013. Based on the information provided by WNPA on sales of water (over the last 11 quarters) here at PECO, it can be expected that any loss in gross sales as a result of implementation of this program will be inconsequential. The expectation is contingent on the fact that sales of reusable bottles will continue to increase as the sale of disposable bottles is eliminated.

#### **7. Availability of water by concessioner with food operations**

PECO does not have a concessioner and/or food operations.

#### **8. Educating visitors to the park to bring along their own water bottle to the park.**

The use of the already installed water filling station indicates the public's willingness to adopt a program of filling reusable bottles for water. The park will continue to facilitate this trend by providing relevant information to the public on how our program to eliminate disposable bottles is progressing and when it is fully implemented. This will give the visitor full notification of suggested items visitors should have prior to visiting the park. Park staff will disseminate this information to the public through printed material, website, social media, and orally. All staff will be notified of the implementation that they may readily share it with visitors.

#### **9. Results of consultation with NPS Public Health Office**

Information is unavailable at the drafting of this report.

#### **10. Sign plan enabling visitors to find filling station with ease**

There is currently no signage directing visitors to the filling station. However, the filling station is strategically located within the visitor center and is found with little or no direction. If necessary, staff is always available to assist visitors in locating the station.

#### **11. Safety considerations for visitors who may not carry enough water or drink water from surface water sources which carry a potential exposure to disease**

Visitors are never more than a mile from either the newly installed filling station in the visitor center or a traditional drinking fountain at the comfort station located along the trail. Visitors using other trails are advised orally and in site bulletins about the lack of drinking water. Still, they are never more than a mile from their vehicle. The practice of notification in these areas will continue and increased through proper signage if it is deemed necessary. Because of the aridity in the area, it is rare to find surface water along the trail and the possibility of exposure to disease from such a source is limited.

**12. A system for annual evaluation of the program, including public response, visitor satisfaction, purchasing behavior, public safety, and plastic collection rates**

Park management will conduct an annual evaluation of the program by analyzing data collected through:

- Visitor satisfaction/public response collected from comment forms, annual satisfaction survey, and log of complaints/compliments made directly to staff in the visitor center.
- Consultations with the safety officer and issues related to water availability.
- WNPA will continue to analyze sale patterns.

**13. Results of consultations with concessioners and cooperating association**

Consultations with WNPA staff here at PECO have been continuous from initial discussions as to the potentiality of eliminating disposable water bottles. These consultations have led to the sale of reusable bottles that are acceptable to both parties. As a result, an agreement was reached on the timeline for the eventual elimination of disposable bottled water sales. Throughout the process, both parties have been committed to finding a common vision and have worked together in implementing a viable program.

**14. Timeline of phase in period**

The phase in period of action is well under way, and the park awaits the approval by the NPS-IMRO for continued implementation. Reusable bottles are on the shelf and the drinking station has already been installed. It is expected that full implementation of the program will show an overall benefit to the public, park, and cooperating association. WNPA has approximately 273 bottles of water on hand at the time of this report. Disposable bottled water sales are expected to cease when the inventory has been exhausted and the approval of the program.



United States Department of Interior  
NATIONAL PARK SERVICE  
Petrified Forest National Park  
P.O. Box 2217  
1 Park Road  
Petrified Forest, Arizona 86028




A7217

Memorandum

August 27, 2012

To: Director, Intermountain Region

From: Superintendent, Petrified Forest National Park 

Subject: Request for Approval to Eliminate the Sale of Water in Disposable Plastic Bottles

Petrified Forest National Park proposes to eliminate the sale of single-use water bottles, experiment with the sale of water in cans and gallon jugs instead, and create water bottle filling stations at each of the three main points of visitor contact in the park. Attached is the required analysis of the situation. We seek your concurrence with the proposal.

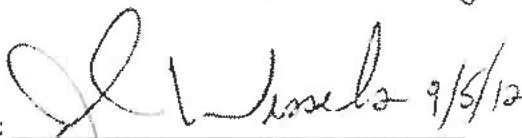
Thank you

Attachment

Recommend Concurrence:

  
Laura E. Joss, Deputy Regional Director

Concur:

  
John Wessels, Regional Director

## **Petrified Forest National Park**

### **Analysis of potential impacts/effects of plastic bottle replacement program – substituting water in aluminum cans and gallon jugs for single-use plastic bottles**

#### **1. Amount of waste eliminated and pros/cons to overall park operations**

In calendar year 2010, Xanterra sold approximately 9000 single use bottles of water. It is unclear what percentage of these made their way to the park's waste stream but approximately 30% of the park's recycling volume that year was single use plastic bottles. Eliminating the sale of single use water bottles will not reduce the recycle volume to nothing because visitors and residents will bring them from elsewhere but it will eliminate an estimated 9000 bottles per year from the at-large waste stream.

##### Pros:

- Decreases in plastics going into circulation, whether to be recycled or land-filled, or into the environment another way.
- Decreases in monetary costs to any visitor who would have purchased more than one bottle of water within the park; and if our education efforts are successful, visitors may save additional money as they continue to refill their reusable bottles after they leave the park.
- Savings of resources used and Green House Gases (GHCs) released during the transportation of waste and recyclables and during the recycling process.
- Decreases in litter associated with disposable bottles.
- Reduces risk of plastic bottle ingestion. Birds, rodents, and larger mammals are known to be attracted to plastic bottles. Thinking there is food/water inside, animals chew and inadvertently swallow plastic pieces. It is well documented that ingested plastic can become lodged in throats and choked on and/or accumulates and creates blockages in digestive tracks.
- Diminishes release of toxic chemicals such as bisphenol A (BPA). Toxins leached from plastics are known to have negative effects on wildlife.

##### Cons:

- Bottled water is a high profit margin item for the park concessioners and partners. If reusable bottle sales (lower profit margin) do not make up for this, concessioners and partners could incur some financial loss. (See #6 for additional analysis).
- Some people perceive a risk to visitors of dehydration as visitors have become accustomed to relying on single use water bottles for hydration.

#### **2. Infrastructure Costs and funding source(s) for filling stations**

Petrified Forest National Park already has water fountains in public places at all three primary visitor contact areas. The cost to convert these to water bottle filling stations (gooseneck spouts and signing) is miniscule and will be absorbed in base operating funds.

#### **3. Contractual implications on concessioners, including considerations of new leaseholder surrender interest or possessory interest**

Xanterra is the long-time concessioner at Petrified Forest and is on the 17<sup>th</sup> one-year extension of their expired contract. The proposed adjustment here is the substitution of 12 ounce aluminum water cans and 1 gallon water jugs for single use water bottles in their two stores. No financial interest is involved.

#### **4. Operational costs of filling stations including utilities and regular public health testing**

The three water fountains to be used as water bottle filling stations already exist – no new operating costs are anticipated.

#### **5. Cost and availability of BPA-free reusable containers:**

Xanterra sells 5 different types of BPA-free water bottles from \$6.99 to \$11.95. The Petrified Forest Museum Association sells one aluminum water bottle, with several different designs, for \$19.95.

#### **6. Effect on concessioner and cooperating association sales revenue**

Based on a voluntary trial run, Xanterra projects a loss in water sales of approximately 60% when cans and gallon jugs of water are sold in place of single-use water bottles. Sales of reusable water bottles may increase but are not expected to make a significant contribution to offsetting the loss. As a percentage of General Merchandise sales (grocery and film, primarily), the drop in water sales is expected to be approximately 7%. As a percentage of total retail sales, it is approximately 0.6%.

The cooperating association does not sell water but has recently begun selling aluminum water bottles.

#### **7. Availability of water within concessioner food service operations**

The restaurant at Petrified Forest includes water as a beverage option. New signing has identified the beverage dispenser as a place to fill water bottles.

#### **8. Visitor Education in the park and on line so that visitors may come prepared with their own water bottles**

Within the park, information about the filling stations and reusable water bottle promotion will be available in the park newspaper and on all filling stations. The primary site at the Painted Desert Visitor Center (located before visitors enter the park) will have an exhibit explaining the program at the water fountain. A site bulletin will be completed on the water filling stations and will be made available on-line and throughout the park. The NPS and concessioner staff within the park have been provided with information about the program and encouraged to share this information with park visitors. In addition, the park will add information to the website about the filling stations and the reusable water bottle program. This info would be updated to reflect that water in individual disposable containers is no longer sold within the park; and a link to the filling station/ ban page would be featured on the park's home page to ensure easy access to information about the change.

#### **9. Results of consultation with NPS Public Health Office**

The park has incorporated numerous consultation meetings with the NPS Public Health Office. The Public Health Office reviewed the design of the water filling stations, commented on placement of the stations to meet public needs and all aspects were found to be satisfactory. The NPS Public Health Office is fully supportive of this ban, as any concerns about public safety have been addressed.

#### **10. A sign plan so that visitors can easily find filling stations**

Filling stations are at all three visitor contact locations in the park, including the trailhead to the Painted Desert Wilderness. Each is in a prominent location and will be well marked.

#### **11. Safety considerations for visitors who may resort to not carrying enough water or drinking from surface water sources with potential exposure to disease**

There is virtually no surface water at Petrified Forest most of the year and, in part because of the lack of water, very little long-distance hiking or backpacking. The park's safety messages always include admonitions to carry sufficient water and snacks – future messages will include water availability.

#### **12. A system for annual evaluation of the program, including public response, visitor satisfaction, buying behavior, public safety, and plastic collection rates**

On an annual basis the park would monitor and collect the following data:

- Visitor satisfaction/public response by using the visitor comment forms – log in complaints/compliments (Public Response and Visitor Satisfaction).
- Visitor and Resource Protection staff will track incidents/contacts related to water availability and dehydration (Public Safety).
- 
- We will track sales with Xanterra (Buying Behavior).
- Interpretation will track sales with PFMA (Buying Behavior).
- Administration will track collection rates with input from our contracted carrier (Collection Rates).

A position in the park will be designated as the “project manager” to collect all of the data and evaluate the data on an annual basis.

#### **13. Results of consultation with concessioners and cooperating associations**

Consultation with the concessioner and the cooperating association began informally in 2011. These discussions included the development of alternative products that are both sustainable and affordable (various price points) in order to allow the organizations an opportunity to recoup revenue currently associated with bottled water sales. The concessioner is supportive of the aims of the bottle replacement program and suggested aluminum cans and gallon jugs as alternatives, which the park has approved.

#### **14. Timeline of phase in period**

Xanterra has experimented with the aluminum cans and gallon jugs during the 2012 summer season. The water bottle sign is poised for installation in the fall of 2012 and alterations to existing water fountains will be ready for the summer of 2013.



United States Department of the Interior  
NATIONAL PARK SERVICE  
San Antonio Missions National Historical Park  
2202 Roosevelt Ave.  
San Antonio, Texas 78210  
(210) 534-8833



In reply to:  
L76 (7600)

MAY 11 2012

Memorandum

To: Regional Director, Intermountain Region  
Through: Deputy Regional Director, Intermountain Region  
From: Superintendent, San Antonio Missions NHP  
Subject: Request for Approval to Eliminate the Sale of Water in Disposable Plastic Bottles

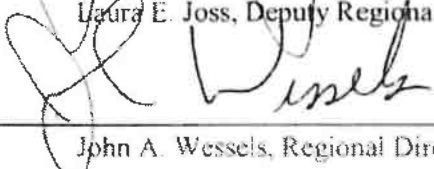
We are in the process of modifying two drinking water fountains in our Visitor's Center to enable the filling of reusable water bottles. Our park Green Team has worked closely with Western National Parks Association (our bottled water vendor) to plan and ensure a smooth transition from disposable plastic bottles to selling only reusable bottles. This action is called for in our park Sustainability Plan and supported by our EMS.

In accordance with the policy memorandum issued by the Director on December 14, 2011, we have prepared the attached analysis of the impacts of such an effort, including consultation with the NPS Public Health Office, and I am requesting your approval to continue the implementation of this program.

Recommend Concurrence:

  
\_\_\_\_\_  
Laura E. Joss, Deputy Regional Director

Concur:

  
\_\_\_\_\_  
John A. Wessels, Regional Director

Attachments



## San Antonio Missions National Historical Park

### Analysis of potential impacts/effects of switching from sales of disposable bottled water to reusable bottles

#### 1. Amount of waste eliminated and pros/cons to overall park operations

By volume, San Antonio Missions National Historical Park (SAAN) could eliminate an estimated 25% of what is currently recycled and approximately 10% of the park's overall waste stream. SAAN staff and Waste Management (the park's recycling and solid waste disposal contractor) agree that disposable plastic bottles (all bottles, not just water) comprise about 25% of the park's recyclables by volume. In fiscal year 2011, the park recycled more than 19 tons of material.

#### Pros:

- Decreases in plastics going to the landfill (although about 60% of the park's waste stream is currently diverted to be recycled, it is estimated by the waste management staff that about 40% of what is taken to the landfill could also be recycled).
- Decreases in monetary costs to any visitor who would have purchased more than one bottle of water within the park; and if our education efforts are successful, visitors may save additional money as they continue to refill their reusable bottles after they leave the park.
- Savings of resources used and Green House Gases (GHCs) released during the transportation of waste and recyclables and during the recycling process.
- Decrease in amount of labor custodial staff devote to handling recyclable material (sorting and transporting to central bins) when the volume declines.
- Decreases in litter associated with disposable bottles both within and adjacent to the park.
- Reduces risk of plastic bottle ingestion. Birds, rodents, and mammals are known to be attracted to plastic bottles. Thinking there is food/water inside; animals chew and inadvertently swallow plastic pieces. It is well documented that ingested plastic can become lodged in throats and choked on and/or accumulates and creates blockages in digestive tracts.
- Diminishes release of toxic chemicals such as bisphenol A (BPA). Toxins leached from plastics are known to have negative effects on wildlife.

#### Cons:

- Bottled water is a high profit margin item for the Western National Parks Association (WNPA). If reusable bottle sales (lower profit margin) do not make up for this, the WNPA could incur some financial loss. (See #6 for additional analysis). However, WNPA is totally supportive of switching to reusable bottles.
- Some people perceive a risk to visitors of dehydration. (Bottled water is a relatively recent retail innovation and this concern was well addressed before its advent by providing drinking fountains at strategic locations).

## **2. Infrastructure Costs and funding source(s) for filling stations**

SAAN is adapting two drinking water fountains in the Visitor Center at Mission San Jose to accommodate reusable water bottles as soon as possible in FY 2012. (The Visitor Center is the only location where disposable bottled water is sold.) A standard Elkay adaption will be used on the existing fountains (see illustration below).



A few other park drinking fountains may be adapted in FY2013 and/or 2014, depending on need. The total cost of adapting the interior Visitor Center drinking fountains is \$1,400. Funding sources for this project are park operational funds.

## **3. Contractual implications on concessioners, including considerations of new leaseholder surrender interest or possessory interest**

All bottled water is sold by the WNPA. WNPA is a cooperating association operating under an agreement with the NPS. There is no contract or possessory interest to consider.

## **4. Operational costs of filling stations including utilities and regular public health testing**

The park is on the San Antonio Water System (SAWS). The park consumes several million gallons of water every year. The additional water use from these filling stations is insignificant, and certainly less than \$20 per month, or \$240 per year. SAWS regularly test their water supply and these data are readily available, so testing of water by the park is unnecessary. The park will post the most current SAWS data at the fountain.

## **5. Cost and availability of BPA-free reusable containers:**

There are numerous companies that sell reusable, BPA-free bottles at a range of prices. The 28 oz. reusable bottle that the park wishes to offer will retail for around \$3.00, is BPA-free, and made in the USA of recycled materials. Disposable bottled water in the park sells at \$1.75 per bottle at the present time. WNPA also already sells 32 oz. Nal-gene reusable bottles for \$12, which will continue until they are gone and a suitable replacement is found (if desired).

## **6. Effect on concessioner and cooperating association sales revenue**

Sales information for WNPA disposable bottled water at Mission San Jose for the last three years is provided below. Our belief is that WNPA will not have a substantial loss in gross sales revenue as the disposable plastic water bottle sales are replaced by reusable water bottle sales.

2009 – 12,294

2010 – 9,882

2011 – 7,940

## **7. Availability of water within concessioner food service operations**

There are no food service operations at SAAN.

## **8. Visitor Education in the park and on line so that visitors may come prepared with their own water bottles**

Within the park, information about the adapted drinking fountain/filling station and the switch to reusable water bottles will be available at the Visitors Center. In addition, a bulletin on the water filling station and switch to reusable bottles will be completed and posted on-line and at the Visitors Center desk. The NPS and WNPA staff within the park have been provided with information about the program (via e-mail) and encouraged to share this information with park visitors. Externally, information on the program will be posted on the park's website (homepage and news release page).

## **9. Results of consultation with NPS Public Health Office**

The park has coordinated this analysis with the NPS Public Health Office and they are fully supportive of this program, and have no concerns about public safety.

## **10. A sign plan so that visitors can easily find filling stations**

There is currently no signage in place for the existing drinking fountains within the park. These fountains are all located at or near restrooms, and their presence is fairly obvious. However, the adapted fountain/filling station will have NPS interpretive signage that will make it more obvious.

## **11. Safety considerations for visitors who may resort to not carrying enough water or drinking from surface water sources with potential exposure to disease**

SAAN is a small urban park where the average visitor is never more than 2,000 feet from a park drinking fountain. Therefore, this is not an issue at the present time. If and when longer trails are developed in the park, signs warning visitors to carry water and directing them to the closest filling station will be placed at trailheads.

**12. A system for annual evaluation of the program, including public response, visitor satisfaction, buying behavior, public safety, and plastic collection rates**

On an annual basis the park would monitor and collect the following data:

- Visitor satisfaction/public response by using the visitor comment forms – log in complaints/compliments (Public Response and Visitor Satisfaction).
- Safety Officer/Chief Ranger will keep a log of any safety issue related to water availability (Public Safety).
- WNPA will track sales (Buying Behavior).

The Park Sustainability Coordinator will collect and manage the above data and annually evaluate the data.

**13. Results of consultation with concessioners and cooperating associations**

Consultation with local WNPA staff commenced in the fall of 2011 and has continued throughout this process. In February, 2012 the park responded to an offer from Scott Aldridge, Chief Operations Officer of WNPA to provide assistance in making the switch from disposable bottled water sales to reusable containers and filling stations. The park chose the reusable bottle proposed by WNPA. The two parties are committed to working together to phase out existing disposable bottled water sales and implement the new program.

**14. Timeline of phase in period**

The phase in period will start as soon as approval is obtained from NPS-IMRO. It is expected that drinking fountain modification will be completed before approval (funds are in hand and the park is going to do the modification regardless of this outcome). The new reusable containers will be ordered as soon as approval is obtained. Disposable bottled water sales will cease when the WNPA inventory is exhausted. Also upon approval, information about the park's reusable water bottle program will be distributed to media outlets and park staff, as well as posted on the park's web site, so that visitors could be informed of their options and the environmental benefits of this program.



United States Department of the Interior



NATIONAL PARK SERVICE  
Saguaro National Park  
3693 South Old Spanish Trail  
Tucson AZ 85730

IN REPLY  
REFER TO:  
A5623

March 16, 2012

*Approved 3/23/12  
J. J. [Signature]*

To: Regional Director and Deputy Regional Director, Intermountain Region  
From: Superintendent, Saguaro National Park  
Subject: Analysis of Potential Impacts & Effects of Implementing the Director's Policy of Recycling and Reducing Disposable Plastic Bottles, Saguaro National Park

Per the Director's recent policy designed to recycle and reduce disposable plastic bottles in national parks (memo dated January 3, 2012), Saguaro National Park (SAGU) has completed an analysis of the potential impacts of banning their sale in the park.

SAGU does not have a concessions operation within the park, nor does the cooperating association (Western National Parks Association, WNPA) sell ready-to-consume food or drink. However, The Friends of Saguaro National Park (FOSNP) currently has an informal agreement with the Pepsi Corporation to operate vending machines that dispense bottled water, Gatorade, and canned soda. There are a total of four vending machines, two each directly outside of the park's two Visitor Centers (Tucson Mountain District and Rincon Mountain District). These machines net about \$10,000 total in sales annually, with FOSNP retaining about 40% (\$4,000) in commission, and the remainder going to Pepsi.

Both districts of Saguaro are adjacent to the city of Tucson, and within easy driving distance of urban amenities, including convenience stores, grocery stores and restaurants. Nevertheless, the vending machines have been in place for several years and are popular particularly during Tucson's warmer months. Dehydration is a significant safety issue for visitors, especially in the summer. Thus, the park appointed an interdisciplinary committee represented by all divisions to conduct the analysis and determine whether to discontinue the sale of bottled/canned beverages in the park. Based on the evaluation, the park's final decision is to remove the four vending machines in the park, two from each visitor center. Below is the completed analysis.

### *1. Amount of waste eliminated and pros/cons to overall park operations*

Saguaro National Park could eliminate up to 40% of what is currently recycled; about 15% of the park's total waste stream. In fiscal year 2011, disposable plastic bottles accounted for about 22% of the park's recyclables, and aluminum cans about 17%.

#### Pros

- Results in less plastic and aluminum garbage, which is good for the park and overall environment
- Decreases litter in the park
- Supports NPS "Green Parks Plan" and "Healthy Parks Healthy People" Strategies
- Provides a model/education opportunity for green practices and sustainability
- Improves visitor safety by reducing/eliminating bees and wasps that congregate near garbage cans due to the sweet, sticky soda cans
- Increases revenue for Western National Parks Association (WNPA) by promoting and increasing sales of reusable water bottles in both park visitor centers.

#### Cons

- Results in loss of revenue for Friends of Saguaro National Park (FOSNP)
  - Mitigation: FOSNP points out that this loss, about \$4K, is really to the park. Saguaro deems this an acceptable trade-off.
- Does not provide portable water for visitors who arrive after hours and don't already have their own water bottles.
  - Mitigation: WNPA may look into providing vending machines that sell/dispense their water bottles. Visitor education about water availability will be increased to provide as much pre-visit information as possible.
- Dehydrated people coming to the VC for water/electrolytes won't be able to buy Gatorade.
  - Mitigation: These visitors can get assistance, water and/or electrolytes from rangers as is procedure now. WNPA may sell powdered Gatorade in packages.

### *2. Infrastructure costs and funding sources for filling stations*

Saguaro purchased five water bottle filling stations for our 2011 Bioblitz, and has installed three at the eastside visitor center, two at the westside VC. The park also has three water fountains. No additional funds are needed.



**A newly installed water bottle filler at the Tucson Mountain District's Red Hills Visitor Center. Visitors were using the device before the installation crew had left the site!**

### *3. Contractual implications on concessioners*

N/A. The four existing vending machines (two at each Visitor Center) are operated through FOSNP. There is no written contract between FOSNP and Pepsi who own the vending machines; nor is there a Commercial Use Authorization in place.

### *4. Operational costs of filling stations, including utilities and public health testing*

Maintenance staff already conduct weekly water testing. This will not change/increase due to the water filling stations.

### *5. Cost and availability of reusable containers*

WNPA currently sells two reusable water bottles – an inexpensive (\$2.95) bottle, which fits in bicycle water bottle cages, and a larger (32 oz.) nalgene bottle for \$12.95. (The cost of a bottle of water from the park's vending machines is \$1.25). At the park's request, WNPA has recently added an attractive new hard plastic reusable bottle with the park's logo, that will sell for \$2.99. All of these items are BPA free.

All variations and themes of water/drink holders are available within five miles of either district, throughout the community of Tucson.

*6. Effect on concessioner and cooperating association sales revenue*

WNPA should benefit from this action through increased sales of reusable water bottles. WNPA will monitor these sales on a quarterly basis to quantify the increase in sales.

*7. Availability of water within concession food service operations*

N/A. The park has no concession food services in either district.

*8. Visitor education in the park and online so visitors may come prepared with their own water bottles*

The park is advertising both the removal of vending machines and the installation of water filling stations through a media campaign including a press release to print, television and radio outlets; highly visible signage near the new bottle filling stations; a 60 day spot under "emergency message" on our website; and a long term quicklink from the front page to a new webpage with targeted messaging about why we made the change and where to find reusable water bottles. In addition, the Saguaro Sentinel park newspaper has updated information about water availability and updates to park maps indicating where the new water filling stations are located.

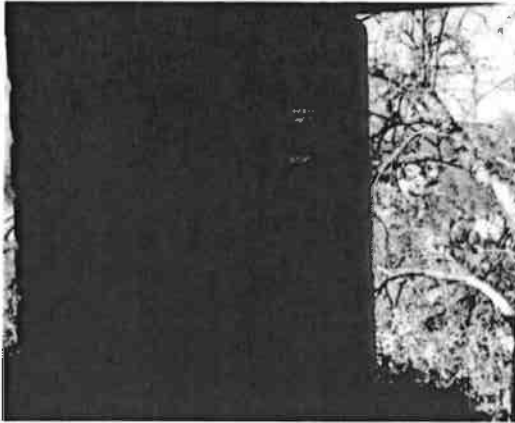
*9. Results of consultation with the NPS Public Health Office*

The park consulted LCDR Adam Kramer, USPHS, Regional Public Health Consultant, NPS Public Health Program, IMR. Adam asked that the park consider the potential increase in the probability of a park visitor going hiking without sufficient water. He also acknowledged that the park has reusable water bottles available for purchase, and that there are other nearby opportunities for individuals to purchase drinks or reusable containers.

*10. A sign plan so that visitors can easily find filling stations*

Water filling stations will be highly visible, well signed in conspicuous/strategic locations around the bottle fillers in all public locations. The signs will be modeled after those in use at GRCA and ZION, and will not only direct people to the water fillers, but will provide educational information on the NPS's efforts to reduce waste and promulgate sustainable practices. They will cost ~\$1,000 and will be funded from the park's donation account. Temporary signs will be in place before the vending machines are removed in March, 2012. Pending evaluation of signage, permanent fabrication and installation will occur Summer 2012.





Draft signs for water filling stations, with a visitor taking advantage of the new system.

*11. Safety considerations for visitors who may not carry enough water or who resort to drinking from surface water sources*

Due to the dry and hot weather conditions at Saguaro, the park already makes a concerted effort to provide information and educate visitors about the dangers of hiking in the desert unprepared, particularly without sufficient water. Information and recommendations for planning a visit or hiking in Saguaro National Park (on website, in park newspaper, during programs, on signage at trailheads, etc.) all reiterate the importance of bringing plenty of water. Furthermore, rangers are available to assist those who suffer ill effects from inadequate hydration, or drinking from unpotable/natural water sources.

*12. A system for annual evaluation of the program, including public response, visitor satisfaction, buying behavior, public safety and plastic collection rates.*

The park will collect, summarize and report the following information annually:

- Visitor comments (Branch Chief of Interpretation)
- Incidents in park due to lack of water (Chief Ranger)
- Water management/quality reports (Facility Manager)
- Recycled waste collection rates/volume (Facility Manager)
- Water bottle sales (WNPA to Superintendent)

The park shall continue submission of environmental data and waste stream reports, incident statistics, and WNPA summary reports.

*13. Results of consultations with concessioners and cooperating associations*

The park superintendent has spoken on several occasions to FOSNP, who operate and benefit financially from the vending machine sales, and who will lose money from this action. The Board understands the rationale for eliminating waste and removing the vending machines, and they support the decision. The Superintendent also spoke with WNPA, who will benefit

financially from this action through increased reusable water bottle sales. WNPA supports the proposal and has already ordered an additional, affordable reusable water bottle for sale. Furthermore, WNPA will consider other actions (i.e., water bottle vending machines, selling powdered Gatorade packages) to mitigate the negative impacts identified in this analysis.

*14. Timeline of phase in period*

- December 14, 2011 Park received Director's memo.
- January 6, 2012 Teleconference between IMR DRD Laura Joss, WASO Commercial Services Contract Mgt Branch Chief Kurt Rausch, and SAGU Supt Darla Sidles re: clarification of new NPS policy in absence of CUA.
- January 11, 2012 Superintendent Darla Sidles contacted the Executive Directors of FOSNP and WNPA regarding the potential impacts to the park and each organization if vending machines sales were eliminated.
- February 6, 2012 Interdisciplinary team representing all park divisions meet to discuss the new policy and identify the information needed to assess impacts of eliminating vending machines selling water, Gatorade and soda in the park.
- February 7-22, 2012 ID Team and park staff collected data.
- February 23, 2012 ID Team reconvened to analyze the data, and assess the impacts, effects and potential mitigations. Team made decision to eliminate vending machines. Superintendent relayed this decision to FOSNP and IMR.
- Feb 23-Mar 16, 2012 Park develops public information, signs, and online resources to educate the public about the change.
- February 24, 2012 FOSNP contacted Pepsi and requested they remove machines by March 23.
- March 2, 2012 All water filling stations operational.
- March 16, 2012 Final meeting of ID Team. Temporary signs in place at water filling stations.
- March 23, 2012 Vending machines removed.
- March 26, 2012 Press Release issued.
- Summer 2012 Permanent signing in place at water filling stations.

## **Salinas Pueblo Missions National Monument**

### **Analysis of potential impacts/effects on bottle ban**

#### **1. Amount of waste eliminated and pros/cons to overall park operations**

By volume, Salinas Pueblo Missions National Monument (SAPU) could eliminate up to 15% of what is currently recycled and up to 10% of the park's overall waste stream.

##### Pros:

- Decreases the amount of plastics going into landfills
- Savings of resources used during the transportation and processing of waste and recyclables
- Reduces risk of animals ingesting pieces of plastic bottles
- Decreases potential release of toxic chemicals such as BPA.

##### Cons:

- The Abo visitor center does not have potable water so in turn we offer bottled water as a courtesy to visitors. (Due to the location of the site it would not be cost effective to have a company bring water and service an office type water cooler to meet NPS health and safety standards.)
- Bottled water is a high profit margin item in the vending machines. (This money goes into an employee association account which contributes to the free courtesy water bottles at Abo)

#### **2. Infrastructure Cost and funding sources for filling stations**

Based on prices of 3 filling stations and associated cost (including labor cost and additional tools/ items needed) the construction of filling stations is an estimated \$45,000. Funding resources would include base funding, PMIS project funding, and funds provided by WNPA.

#### **3. Contractual implications on concessioners, including considerations of new leaseholder surrender interest or possessory interest**

Salinas Pueblo Missions National Monument does not currently have any concessionaires or contractual agreement for any group involved with the sale of bottles beverages including water.

#### **4. Operational cost of filling stations including utilities and regular public health testing.**

The park estimates that it will spend about \$70 a year per filling station for a total of \$210 a year.

#### **5. Cost and availability of BPA- free reusable containers:**

WNPA does not currently sell reusable containers except for mugs. The least expensive mug is \$11.99. WNPA will sell reusable water bottles again if there is an interest or need in the park.

#### **6. Effect on concessioner and cooperating association sales revenue.**

Salinas Pueblo Missions National Monument has only one cooperation association (Salinas Pueblo Missions Employees Association) that sells water. The association has been notified and will no longer



United States Department of the Interior  
 NATIONAL PARK SERVICE  
 SALINAS PUEBLO MISSION NATIONAL MONUMENT  
 PO Box 517  
 Mountainair, New Mexico 87036



In Reply Refer To

A7217

November 20, 2014

Memorandum

To: Director, Intermountain Region

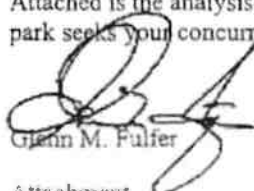
From: Superintendent, Salinas Pueblo Missions National Monument

Subject: Request for Approval to **Eliminate** the Sale of Water in Disposable Plastic Bottles

Per the director's policy to recycle and reduce disposable plastic bottles in National Parks, **Salinas Pueblo Missions National Monument** has completed an analysis of **the** potential **effects** of ending the vending of disposable water bottles in **the** park.


There are no concession food service operations at any of our locations. We have one vending machine at each of the three resource sites operated by the Salinas Pueblo Missions Employee's Association to sell bottled beverages including water as a visitor convenience. The Salinas Pueblo Missions Employee's Association will no longer sell water in the vending machines. The employee's association uses funds to supply the Abo site with free water bottles to the visiting public due to the lack of potable water at the site. When Abo's water system becomes safe for visitor consumption we fully intend to eliminate the sale and distribution of disposable water bottles within the monument.

Attached is the analysis of potential impacts/effects on bottle ban. Based on our analysis the park seeks your concurrence with the proposal.

  
 Glenn M. Fulfer

Attachment

Recommend Concurrence: Jenna E. Joss 11/24/2014  
 Jenna E. Joss, Deputy Regional Director, IMR

Concur:   
 Sue Masica, Regional Director, IMR

sell water once the stock runs out. However the Salinas Pueblo Missions Employees Association will still provide free water bottles to the public at the Abo site due to the lack of potable water.

Water being sold during park events has been beneficial to both the Employee's association and the visiting public, but the absence of the product should not dramatically affect the function of the association.

**7. Availability of water within concessioner food service operations.**

Salinas Pueblo Missions National Monument does not currently have any concessionaires or contractual agreement for any group involved with the sale of bottles beverages including water.

**8. Visitor Education in the park and online so that visitors may come prepared with their own water bottles**

Once the park sells the remaining stock of water bottles we will begin to hand out materials and provide online education about the our initiative to reduce and eventually phase out the sale of plastic bottled beverages at our sites.

**9. Results of consultation with NPS Public Health Office.**

Mountainair, Gran Quivira and Quarai all have potable water which meets or exceeds the standards of the NPS Public Health Office. The Abo water system is not available for public consumption due to the possible influence of surface water and evidence of micro-particulates.

**10. A sign plan so that visitors can easily find filling stations.**

Funding for signs will be added into the total cost of the PMIS project.

**11. Safety Considerations for visitors who may resort to not carrying enough water or drinking from surface water sources with potential exposure to disease.**

At the three resource sites we have bags set up for minor search and rescue incidents. In the bags we have fire fighter type water bottles that can be used by visitors in case of an emergency. Our longest trail is at Quarai and is approximately 1 mile round trip and water is available via water fountain and faucet.

**12. A system for annual evaluation of the program, including public response, visitor satisfaction, buying behavior, public safety, and plastic collection rates.**

On an annual basis the park would monitor and collect the following data:

- Public Response and Visitor Satisfaction – collecting comment forms and visitor satisfaction surveys
- Buying Behavior – We will track WNPA reusable water bottle sells and soda sells in the vending machines.
- Public Safety – CDSO and Zone Safety officers will keep a log of any water related safety issue.
- Plastic Collection Rates – Maintenance will track collection rates.

**13. Results of consultation with concessioners and cooperating associations.**

Salinas Pueblo Missions National Monument has only one cooperation association (Salinas Pueblo Missions Employees Association) that sells water. The association has been notified and will no longer sell water once the stock runs out. However the Salinas Pueblo Missions Employees Association will still provide free water bottles to the public at the Abo site due to the lack of potable water.

**14. Timeline of phase period.**

Once the park has the proper funding for the water filling stations and an additional filter to ensure Abo has potable water the park will be eliminating all one time use water bottles from the park.



## United States Department of the Interior

NATIONAL PARK SERVICE  
Timpanogos Cave National Monument  
Rural Route 3, Box 200  
American Fork, Utah 84003-9800

REPLY REFER TO:

A5623 (1550)

### Memorandum

To: Regional Director, Intermountain Region  
From: Superintendent, Timpanogos Cave National Monument

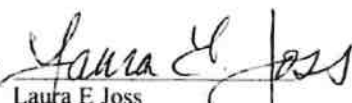
Subject: Request for Approval to Eliminate the Sale of Water in Disposable Plastic Bottles

In 2010, Timpanogos Cave National Monument installed a water bottle filling station and began to work cooperatively with our concessioner to reduce the number of disposable plastic beverage bottles in our waste stream through the gradual reduction and eventual elimination of the sale of such bottles by the concessioner.

The recently renewed concession contract for the Monument requires the sale of refillable bottles, and we are now ready to formally eliminate disposable plastic bottles as a sales item when we open these facilities to the public in early May.

In accordance with the policy memorandum issued by the Director on December 14, 2011, we have prepared the attached analysis of the impacts of such an effort, including consultation with the NPS Public Health Office, and I am requesting your approval to continue the implementation of this program.

Recommend Concurrence:

 3/19/12  
Laura E. Joss  
Deputy Regional Director

Concur:

  
John Wessels, Regional Director

## Timpanogos Cave National Monument

### Analysis of the Elimination of the Sale of Water in Disposable Plastic Bottles

March 8, 2012

#### 1. Amount of waste eliminated and pros/cons to overall park operation

Because of the relatively small scale of the park and its waste management operations, we have not performed the detailed analysis of the waste stream that would be required to accurately quantify the expected reduction. Since this proposal is already well underway and non-controversial, we don't believe that the cost of such an effort is justified at this point, but we will institute random sampling from this point forward as part of our program evaluation.

Approximately 80,000 – 90,000 visitors hike the cave trail annually. If we conservatively assume that even 10% of those hikers use and dispose of a water bottle in the park, this effort could reduce or eliminate 8,000 – 9,000 bottles from our waste stream annually.

Currently, we maintain a 14 trash cans and several recycling cans along the 1.5 mile cave trail and 20 in the Swinging Bridge picnic area. Disposable plastic water bottles make up the majority of the volume of trash collected from the cans along the cave trail, and a significant volume in the picnic area. Because the removal of trash from these cans requires the use of two employees (an operator and a safety spotter) using motorized wheelbarrows on the steep and narrow cave trail, maintenance of these cans represents a significant cost in time, labor, and equipment. Noise, emissions, and right-of-way issues impact hikers whenever a motorized wheelbarrow is used on the trail. Our long term goal is to eliminate most, if not all, of these trail trash cans, and the elimination of disposable water will contribute greatly to that effort.

Despite this relatively high saturation of trash and recycling receptacles along the trail, disposable water bottles are often inadvertently dropped by hikers and end up out of easy reach and caught in vegetation down steep slopes below the cave trail. Removal of this litter requires periodic off-trail travel by park staff in hazardous, high-angle terrain. While some trailside litter will still occur even after the implementation of this program, any reduction in the prevalence of disposable water bottles will reduce the primary source of this problem, which will reduce the risk for visitors and staff trying to retrieve or remove these bottles.

#### 2. Infrastructure costs and funding source(s) for filling station

The bottle filling station, shown in figure 2 on page 2, was installed in 2010. Total project cost was approximately \$10,000 and was paid for with project funds received from the US Forest Service under the American Fork Canyon Recreation Fee Enhancement Partnership agreement.



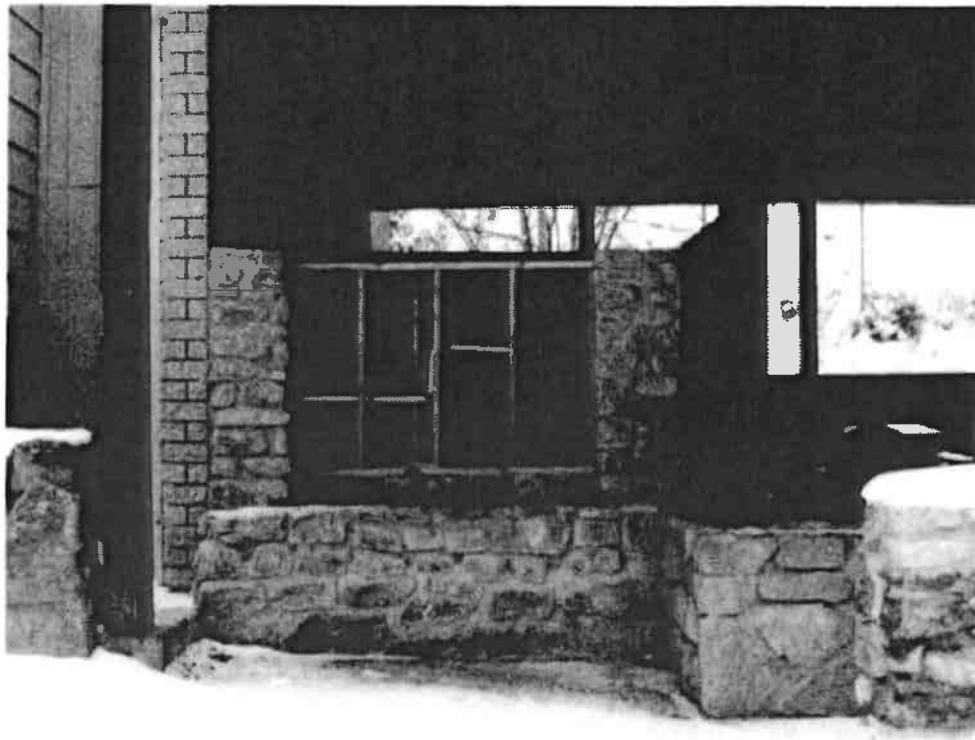


Figure 1 - Filling station under construction. Note proximity of table in adjacent concession food area

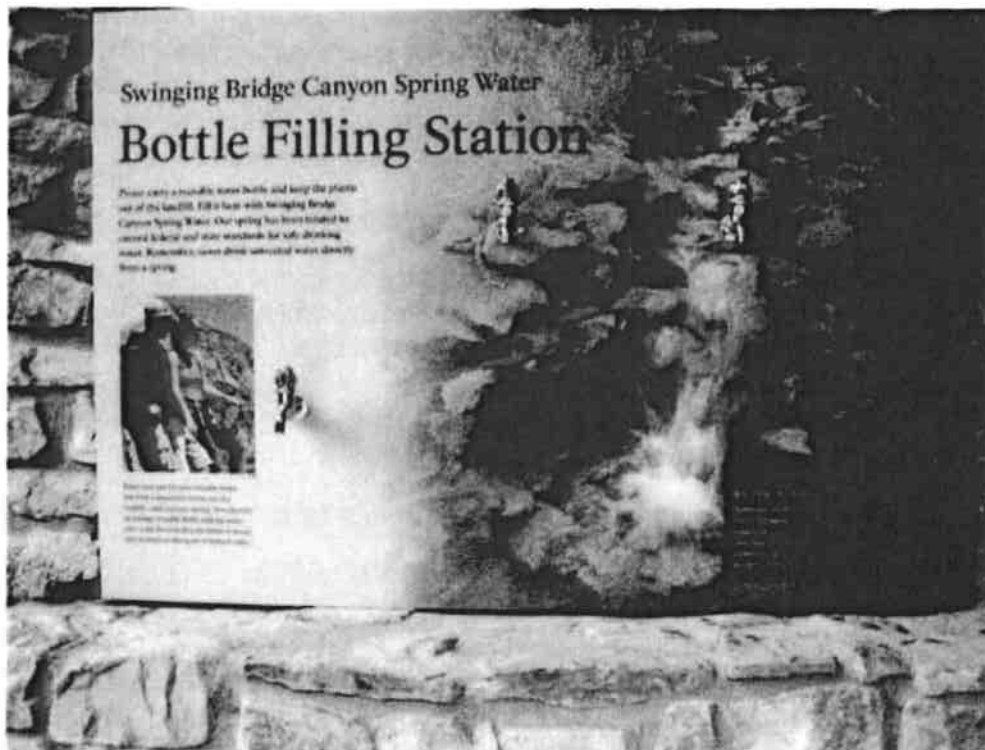


Figure 2 - Completed filling station located in front of BCA visitor contact station at cave trailhead

**3. Contractual implications on concessioners, including considerations of new leaseholder surrender interest or possessory interest**

The park has a single concession contract, for food and beverage service, with Carl and Betsy Wagner. The Wagners have held this contract for over 50 years, and have been a supportive partner of the park's operations and sustainability efforts over time.

Since the filling station was installed in 2010, the park has worked with the Wagners to begin to sell down their inventory of disposable bottled drinks and to investigate options for refillable bottles from various vendors, with the understanding that this program would likely become mandatory in 2012. This two year, voluntary phased-in approach should alleviate most negative implications of this program implementation on the concessioner.

The Wagner's contract was renewed in January 2012 with a 10 year term. The new contract requires the sale of refillable bottles. During the annual review and approval of sales items, the park will work with the concessioner to ensure that they offer a range of BPA-free refillable bottles at reasonable price points. Because the filling station is immediately adjacent to the open-air concession sales area, visitors will be readily able to see both the bottles displayed for sale and the filling station at the same time.

**4. Operational costs of filling stations including utilities and regular public health testing**

TICA has a single gravity-fed domestic water supply system providing water to the bottle filling station as well as all other buildings in the monument. The system is operated by park staff certified by the state of Utah as water system operators and is regularly tested in accordance with applicable federal and state law. This filling station does not add any additional operational or public health testing costs to the system.

**5. Cost and availability of BPA-free reusable containers**

The concessioner, whose hours of operation match the primary visitation period in the Monument, will offer a range of reusable containers for sale immediately adjacent to the filling station and within a few yards of the cave trailhead. All containers will be BPA-free, and we expect them to range in price from approximately \$3.00 for smaller, plain bottles to approximately \$12.00 for larger bottles or those with commemorative or interpretive messaging etc.

**6. Effect on concessioner and cooperating association sales revenue**

We expect no impact to cooperating association sales revenue, since the concessioner will handle all container sales. It is difficult to predict effects on concessioner revenue over time, but our expectation is that net profit from sales of reusable containers will match or exceed that of disposable containers, at least in the short term. The current concessioner just accepted a 10-year contract with the requirement for the sale of refillable bottles, and we believe that they have accounted for any potential revenue increases or decreases in their current business plan.

**7. Availability of water within concession food service operations**

The only concession food service operation is located immediately adjacent to the water filling station (see figure 1 on page 2) and the trailhead used by almost all visitors. Cold drinks (water, soda, etc.) will be available in cups from the concessioner, and visitors can fill / refill cups with water at the filling station.

**8. Visitor education in the park and online so that visitors may come prepared with their own water bottles**

We will prominently include this information in electronic and paper "plan your visit" sources, utilize social media (Facebook and Twitter) to improve information dissemination to local returning visitors, and utilize our personal contacts with visitors reserving cave tour tickets to remind them of the need for water bottles.

**9. Results of consultation with the NPS Public Health Office**

The park shared this document with LCDR Adam Kramer, USPHS, IMR Regional Public Health Consultant on March 7, 2012. His comments were:

Our biggest concern is that people would be hiking without sufficient water. Based on the analysis you've provided you have thought that through and there are provisions for people to get a container at a reasonable cost if necessary.

One thing I would like to mention is based on the photo of the filling station, there does not appear to be a drain under it or at the base. This may lead to pooling water and create it's own safety hazard. I would recommend ensuring that water is not ponding in the area, if it is additional drainage would be warranted.

Park response to NPS Public Health Office comments: Though it is not evident in the photo above, the filling station incorporates a French drain. A perforated metal screen at the base of the unit, below the taps, covers a gravel filter approximately 5 feet deep, which allows the excess water to drain below the concrete sidewalk and adjacent building foundation to the soil below. No ponding has been observed despite daily summer use since the unit was installed in 2010, so no additional drainage appears necessary at this time.

**10. A sign plan so that visitors can easily find filling stations**

The filling station is prominently located adjacent to the park's primary trailhead, and readily visible without additional signage. We currently post a "safety stop" ranger at the trailhead throughout the day, every day, to advise hikers of potential hazards, check for cave tour tickets, remind them of the need for water, etc. The safety stop ranger can and will readily direct visitors to the filling station, located just yards away.

**11. Safety considerations for visitors who may resort to not carrying enough water or drinking from surface water sources with potential exposure to disease**

There are generally no surface water sources along the cave trail, so that risk is very low to non-existent, however high elevation, summer heat, and exertion required to climb the steep trail are all significant potential contributors to dehydration and heat related emergencies.

The primary visitor activity in the park is a hike to and from the cave system for a ranger guided tour or simply for exercise. The trail climbs 1,092 feet (325 meters) over 1.5 miles, starting at an elevation of 5,638 feet above sea level and entering the caves at an elevation of 6,730 feet. Summer high temperatures are typically in the 80s or 90s.

Again, this is part of our justification for personally contacting every hiker at the cave trailhead and – among other things – advising them of the need for adequate hydration. Further, the park maintains a volunteer (VIP) trail patrol program on busy summer days. Volunteers and staff patrolling the trail carry extra water and assist visitors as needed.

**12. A system for annual evaluation of the program, including public response, visitor satisfaction, buying behavior, public safety, and plastic collection rates**

We will periodically randomly sample trash collected throughout the park to evaluate our efforts in reducing disposable plastic bottles specifically and other recyclable materials generally and adjust our educational and recycling collection efforts accordingly.

Visitor comment cards will be monitored for feedback, along with periodic informal discussions with front-line concessions and visitor services staff. If possible, we will include appropriate questions about these efforts on annual visitor survey cards.

Medical incident reports will be tracked for changes in heat and dehydration related incident trends.

Trail patrol rangers and Volunteers will be asked to track cases where visitors are encountered with insufficient water supplies as part of their routine activity logs.

Here again, the small scale of our operation should make it relatively easy to monitor each of these indicators with a small investment of management time.

**13. Results of consultation with concessioners and cooperating associations**

The cooperating association, WNPA, will not be directly involved in this effort, but we have engaged them in hopes that they might assist the concessioner with procurement of reusable bottles similar to those WNPA is developing as a sales item.

As noted above, the concessioner has been engaged for over 2 years and has been voluntarily working to implement this program over that time.

**14. Timeline of phase-in period**

We plan to announce this effort publically as soon as approval is secured, and would implement the program immediately upon opening our facilities to the public for the summer, tentatively scheduled for May 12, 2012.



# United States Department of the Interior



## NATIONAL PARK SERVICE

Zion National Park  
Springdale, UT 84767

C38 (ZION)

Memorandum

To: Regional Director, Intermountain Region

From: Superintendent, Zion National Park

Subject: Analysis of the Elimination of Sales of Water in Individual Disposable Containers

On December 14, 2011, Director Jarvis issued policy on the recycling and reduction of disposable plastic water bottles in parks. The policy stated "Parks that have already successfully implemented programs to install refill stations and eliminate the sale of disposable plastic beverage containers may continue, but must address the above factors – in writing – to their regional director, including a system for annual evaluation." By copy of this memorandum, Zion National Park is submitting an analysis of the specified factors.

Even with the elimination of the sale of water in individual disposable containers, Zion National Park still sees a large amount of single-use plastic bottles in the waste stream. Over 60% of the plastic recycled in Zion by weight is plastic bottles, as well as 3% of landfilled waste. The elimination of bottled water sales is one step in the park's goal to reduce these amounts to zero, resulting in a 14,000 pound reduction in recyclables and an 11,000 pound reduction in landfilled waste. In addition, plastic bottles are a major component of litter found in the park. A reduction in this litter would have a positive effect on the park's ecosystem, while also reducing the personnel costs associated with trash pick-up and removal.

Significant environmental and monetary costs are associated with the transport of waste and recyclables, disposal of non-biodegradable plastics in landfills, removal of litter, and recycling of plastics. As a fiscally responsible, Climate Friendly Park, Zion is interested in minimizing all these costs. Zion has a strong recycling and pollution prevention program, of which the elimination of the sale of water in individual disposable containers is but one part.

Attached please find the required analysis of the impacts and effects of the elimination of the sale of water in individual disposable containers in Zion National Park, per the Director's policy memorandum.

Attachments

Concur:

Date:

4/16/13

**Analysis of Impacts/effects of the Elimination of Bottled Water Sales in Zion Canyon in Compliance with Director's Order A5623 (0130)**



Water filling station at Human History Museum -- Zion National Park

In 2009, Zion National Park (ZION) eliminated the sale of bottled water in the Zion Canyon section of the park. This area hosts all concession operations and the main outlets of the cooperating association; it also receives 90% of the park's visitation. The cooperating association continues to sell bottled water at the Kolob Canyons Visitor Center in the northwest corner of the park due to concerns over nitrate levels in the tap water at that location. This document serves as an analysis of factors that contributed to the decision to eliminate the sale of single-use bottled water.

**I. Amount of Waste Eliminated and Pros/Cons to Overall Park Operations**

Despite the fact that ZION has an aggressive recycling and pollution prevention program, ZION still sees 61% of all plastic recycled as single-use plastic bottles, by weight (Solid Waste Audit, 2012). In fiscal year 2012, ZION recycled 178,961 pounds of recyclable commodities and an estimated 14,364 pounds of that total was single-use plastic bottles. Through the NPS's continued support of pollution prevention, ZION is hoping to reduce that number to 0. In the landfilled waste, 3% of the contents (by weight) are single-use plastic bottles (Solid Waste Audit, 2012). Again, the park would like to see that number reduced to 0.

Pros:

- Operational:
  - Decrease in total cost of solid waste to park operations. ZION operations and visitors are responsible for contributing 558,979 pounds of solid waste into the waste stream. Of that, 178,961 pounds go to recycling facilities located outside the park and 380,018 pounds go to the landfill. This waste contributes to the cost of operations for the park. With a total reduction of single-use plastic bottles, the park would see a reduction of 61% of the plastic recyclables and 3% of landfilled waste. In short, this waste source is a major contributor to the cost of supporting the recycle program at ZION.
  - Decreases in litter associated with disposable bottles within the park. Plastic bottles are a major contributor to the litter found on trails and roadsides. Additionally, plastic bottle debris in vault toilets increases the time and cost involved in emptying vault toilets.
  - Reduction in maintenance man-hours for waste, litter and recycling collection.
- Environmental
  - Decrease in plastics going to the landfill. ZION's landfilled waste consists of 3% single-use plastic bottles or 11,400 pounds (Solid Waste Analysis, 2010).
  - Reduction of resources used and Green House Gases (GHGs) released during the initial production of bottled water, and during the transportation of goods, waste and recyclables, to accommodate the relatively short useful lifespan of bottled water.
  - Reduces risk to wildlife. There are wildlife concerns with any kind of litter but special concerns for plastic bottles include entrapment, ingestion, blocked digestion, and choking.
  - Diminishes release of toxic chemicals such as bisphenol A (BPA). Toxins leached from plastics are known to have negative effects on wildlife and human health.
- Financial
  - Decreases in monetary costs to any visitor who would have purchased more than one bottle of water within the park. To ensure the safety of visitors, the park recommends one gallon of water, per person, per day. For a single person relying on single use bottled water, this would mean they would need to purchase over seven bottles of water daily. The cost of a single reusable water bottle quickly defers that cost for the visitor. Additionally, if our education efforts are successful, visitors may continue to save money as they continue to utilize their reusable bottles after they leave the park.

Cons:

- Financial
  - Bottled water is a high profit margin item for the park concessioners and partners. If reusable bottle sales (lower profit margin) do not make up for this, concessioners and partners could incur some financial loss. (See #6 for additional analysis)

## **2. Infrastructure Costs and Funding Source(s) for Filling Stations**

ZION has always had water available for the public throughout the park using basic spigots and water fountains. In 2009, Xanterra constructed the first water filling station on the Zion Lodge Patio. By the end of 2009, ZION constructed two additional water filling stations in high profile areas, to further educate visitors about hydration and water bottle reuse. The cost of these three stations totaled \$447,200 with an additional \$12,700 for the educational back panels. The funding was provided from the parks' Integrated Solid Waste Action Plan Grant Moneys and concessioner Capital Improvement Account funds (for Lodge location). In 2011, construction of the fourth water filling station was written into a contract for the Temple of Sinawava comfort station rebuild and the cost to the park was significantly less, estimated at \$4,000.

## **3. Contractual Implications on Concessioners, Including Considerations of New Leaseholder Surrender Interest or Possessory Interest**

Xanterra Parks & Resorts, Inc. is the only concessioner in ZION that sold bottled water prior to 2009. When Xanterra bid for the current contract (which covers the period 1/1/09 to 12/31/18), their proposal package included an offer to eliminate the sales of bottled water in their retail outlets. The policy of not selling bottled water was not imposed on the concessioner, but rather independently proposed and promoted by them. The park incorporated Xanterra's offer, among other environmental benefits proposed, into the contract operating plan and as an addendum for best management practices for environmental management.

Xanterra does not have any LSI in the current filling station because it was funded with Capital Improvement Account funds. There are currently no plans to construct additional filling stations within a concessioner's land assignment. If it is decided that additional filling stations are needed, they will be paid for using concessioner franchise fees, NPS base or project funds. This would eliminate the potential for the concessioner to incur leasehold surrender interests.

## **4. Operational Cost of Filling Stations Including Utilities and Regular Public Health Testing**

Zion Canyon processes all potable water used by the park, concessions and visitors; the addition of water filling stations did not increase operational costs. Drinking water in the park is sampled as part of standard procedures in accordance with state and federal drinking water quality laws, these processes do not need to be altered for the addition of the filling stations. The four filling stations are closed each winter; the water flow is turned off and a sign is posted informing visitors of nearby drinking fountains<sup>1</sup>. The process is reversed each spring when the danger of freezing has passed. These costs are minimal. Some additional costs come from the extra custodial work required to clean the basins, and from the additional water use, but these costs have not been specifically enumerated by the park's maintenance division.

## **5. Cost and Availability of BPA-free Reusable Containers:**

Both Xanterra and the park's cooperating association (Zion Natural History Association, or ZNHA) sell a variety of BPA-free, reusable, souvenir bottles at a range of prices. Xanterra's lowest-priced water bottle is \$3.99 and is their biggest seller, followed by a \$10.99 foldable water bottle. ZNHA's lowest-priced water bottle is \$3.29; it is also their biggest seller.

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<sup>1</sup> It should be noted that during the winter, water is still available to visitors through freeze-free spigots and water fountains throughout the park. The areas are marked in the Map and Guide.



**6. Effect on Concessioner and Cooperating Association Sales Revenue**

Sales information for Xanterra is provided below. Sales rose from 2009 to 2011, and then fell in 2012. Xanterra believes this decrease in sales may be attributable to spreading awareness among visitors of the need to have a water bottle with them while in the park. This may also be attributable to a wider cultural awareness by the public regarding the negative impacts to the environment that single use water bottles have.

| Year | Units | Total Retail Sales |
|------|-------|--------------------|
| 2009 | 4,039 | \$29,930.13        |
| 2010 | 6,247 | \$49,482.77        |
| 2011 | 6,528 | \$56,754.52        |
| 2012 | 5,468 | \$45,963.83        |

In 2007 (the most recent year for which data was provided), Xanterra sold \$78,000 worth of bottled water, so sales revenue has decreased for them following the elimination of bottled water from their retail outlets.

ZNHA has seen an increase in sales between bottled water and water bottle offerings. In FY2008, the last year that bottled water was sold in Zion Canyon, they grossed \$34,144 in water sales. In FY2012, they sold \$83,571 worth of water bottles.

**7. Availability of Water within Concessioner Food Service Operations**

All restaurants within the park provide tap water at the table on request. All cafeterias have water available at their beverage service stations. There is a water fountain in the Lodge lobby downstairs from the dining room.

**8. Visitor Education in the Park and Online so that Visitors May Come Prepared With Their Own Water Bottles**

Educational information about the filling stations and reusable water bottle promotion is available in the park newspaper under the header “Environmental Impact.” The park’s website also contains a safety message about drinking water in the desert environment, and provides locations where drinking water is available. The importance of drinking sufficient water is widely available. Within the park publications, one of the top four safety messages to the general public is the importance of “one gallon of water per person, per day.” Information about water availability is offered in multiple locations in all publications, the Spring, Summer, Fall and Winter Map and Guides, and the park Wilderness Guide, as well as warnings against drinking surface water.

## **9. Results of Consultation with NPS Public Health Office**

During the initial planning stages for the filling stations the NPS Public Health Officer was consulted. There were no concerns about the public's safety because of the availability of potable water and the small cost difference between bottled water and the most economical water bottle. The Lodge filling station is inspected during each public health assessment.

## **10. A Sign Plan so That Visitors Can Easily Find Filling Stations**

All locations are near shuttle stops in highly-visited and visible locations. Large educational backboards accompany all dedicated water filling stations. Additionally, the Map and Guide handed to each visitor clearly marks all water filling locations accessible to the public. Also, there are improved signs in the Visitor Center complex.

## **11. Safety Considerations for Visitors Who May Resort to Not Carrying Enough Water or Drinking from Surface Water Sources with Potential Exposure to Disease**

The majority of information provided to the public concerning water and hydration is specifically designed to educate visitors on proper hydration, preparedness and drinking safe water. There are a variety of safety messages in the park newspaper, on the website, and on the shuttle buses that encourage visitors to stay hydrated in the dry environment.

In a recent survey of park visitors performed by the National Center for Injury Prevention and Control, 49.7% of visitors to the park saw a safety message about drinking water in the park before they arrived, and that's with only 43% actively looking for risk or safety information. 85% of visitors received safety information from park staff; water and hydration were among the top 3 messages. 80% of people felt "completely or mostly prepared." 98% of those polled listed "bringing sufficient drinking water" as a safety measure they took upon their visit of the park.

Other operational controls are also used for the safety of the visitors. Filling stations are dispersed throughout the canyon and provide access to water to every visitor. Water is accessible at both campgrounds, the Visitor Center, the Zion Human History Museum, the Lodge, the Grotto, and the Temple of Sinawava. Water bottles are available for sale at the Visitor Center, Museum, and the Lodge. Water bottles are available for purchase with nearby filling stations at every site within the park that previously sold bottled water.

## **12. A System for Annual Evaluation of the Program, including Public Response, Visitor Satisfaction, Buying Behavior, Public Safety, and Plastic Collection Rates**

On an annual basis the park will continue to monitor and collect the following data:

- Visitor satisfaction/public response by using the visitor comment forms – log in complaints/compliments (Public Response and Visitor Satisfaction).
- Filling stations will continue to be inspected by the NPS Public Health Officer.
- Canyon District staff will continue to track incidents/contacts related to water availability and dehydration (Public Safety).
- Concessions will track sales with Xanterra and ZNHA (Buying Behavior).
- Environmental Management System Coordinator will track collection rates with input from our contracted carrier (Collection Rates).
- Environmental Management System Coordinator will be designated as the "project manager" to analyze data on an annual basis, and make recommendation to park Superintendent on program.

### **13. Results of Consultation with Concessioners and Cooperating Associations**

In 2007, ZION's interdivisional staff- and partner-based Green Team began discussions for water bottle filling stations. As members of the park's Green Team, representatives from Xanterra and ZNHA were involved from the beginning as the park began to move towards the elimination of bottled water sales. Separate meetings were held with our non-profit partner, ZNHA, to establish an agreement and elicit their help in finding affordable water bottles to sell. Xanterra even constructed the first filling station at their facility to support the program in 2009.

Both Xanterra and ZNHA supported ZION's decision and have worked with Park personnel to further ZION's commitment to sustainability. Xanterra has expressed their commitment even further by using the ZION example to influence their own corporate policy. ZNHA was initially given three years to phase out bottled water sales, but chose to eliminate it after a single season on their own accord. They also sent representatives to a major industry conference in 2012 to present a session on ZION's bottle filling stations and their role in the program.

ZION's partner organizations were not just consulted with on the bottled water elimination. They were involved in the decision-making process and as such have always been a great support to the program.

### **14. Timeline of Phase-in Period**

Sales of bottled water within Zion Canyon were eliminated in 2009. The program has been successful from the start. Additionally, ZION hopes to serve as an example to other parks as they make the choice to serve as visible exemplars of sustainability and support reuse in our public places.

C5(MORU)

March 29, 2012

**Memorandum**

To: Michael T. Reynolds, Regional Director, Midwest Region

From: Cheryl A. Schreier, Superintendent, Mount Rushmore National Memorial

Subject: Reduction of disposable plastic water bottles in the park

In response to Director Jarvis' Policy Memorandum 11-03 regarding Disposable Plastic Water Bottle Recycling and Reduction, we are pleased to report that through our concessioner, Xanterra Parks and Resorts, a program will be implemented here at Mount Rushmore National Memorial where non-enhanced bottled water will no longer be sold and a hydration station installed for the filling of reusable water bottles. The hydration station is scheduled to be placed into service this spring with a target implementation date of May 1, 2012. Visitors will have an opportunity to purchase reusable containers in a variety of styles, BPA-free, from the more affordable models in the \$5.00 to \$8.00 range upwards to a more deluxe stainless steel model for approximately \$15.00. Additionally, visitors will continue to have an opportunity to purchase bottles of Smart Water or Vitamin Water, which are the enhanced water options.

While this effort will not completely eliminate the sale of beverages in plastic bottles at the park, it will reduce the amount of plastic bottles in the solid waste stream by more than 30,000 plastic bottles per year. The park and concessioner will continue their aggressive recycling program in order to manage the balance generated through the sale of enhanced water products, juices, soda, etc.

In terms of analyzing the impact of this new reduction program, the concessioner estimates that their revenue stream will be impacted by approximately 20% based on the loss of non-enhanced bottled water; however, the concessioner will realize an off-set in revenue by the sale of reusable containers, and the continued sale of enhanced water options. The offset is not something the concessioner is able to forecast or measure at this time, but will be monitoring that impact for annual evaluation purposes. The infrastructure costs for the hydration station are minimal – estimated at approximately \$3,000 for its installation. Operational costs will depend on usage, but are estimated by the concessioner to also be negligible.

The park and our concession partner will work in concert to proactively educate visitors on the importance of the park and partner's recycling and other "green" program efforts currently in place or being developed. Additionally, promotional efforts will also focus on the benefits of the reusable containers and the use of the hydration station, the environmental impacts of their purchasing decisions, and the rationale behind the reduction of the sale of non-enhanced water in plastic bottles.

In order to measure and evaluate the perception of the water station program by our visitors to Mount Rushmore, in addition to their current visitor comment cards, the concessioner will produce a comment card specific to the hydration station service and will position it near the station for ease and convenience. All responses will be shared with the NPS.

As Director Jarvis noted in his memo, "sustainability is a signature of the National Park Service". Mount Rushmore National Memorial is committed, now more than ever, to being an example in this area and fulfilling its Green Parks Plan, which is currently in the process of being developed. Mount Rushmore is also working toward accomplishing the "Go Green" goal as called out in the *Call to Action*, and, we are completing the needed steps to become a Climate Friendly Park. The NPS team at Mount Rushmore is proud to have this particular opportunity to partner with Xanterra, one of the leading concession partners in terms of sustainability and protecting the environment.

Please feel free to contact me if you have questions or would like additional information.

**POLICY MEMORANDUM 11-03 (dated December 14, 2011)**

**Subject:** Disposable Plastic Water Bottle Recycling and Reduction

**ANALYSIS:**

**MOUNT RUSHMORE NATIONAL MEMORIAL**

Clarification: At Mount Rushmore National Memorial there has not been a complete elimination of the sale of bottled water – there has been a reduction of plastic bottles in the waste stream by discontinuing the sale of “non-enhanced” bottled water only (a voluntary action requested by the concessioner and approved by the Park). Enhanced water options continue to be available at the Memorial. (Vitamin Water, SmartWater). In addition, visitors have the opportunity to request a washable glass or a bio-based plastic glass to fill at the water refill station. Visitors may also use a reusable water bottle they brought with them, or they can purchase a reusable container available to them in a variety of styles featuring Mount Rushmore National Memorial, are BPA-free, and are available in a variety of price ranges.

**Amount of waste eliminated and pros/cons to overall park operations:** Pros: 30,000 plus plastic bottles per year eliminated from the solid waste stream, which equates to 830 – 1,250 lbs. depending on the size of the bottle and the manufacturing time frame. Cons: N/A

**Infrastructure costs and funding source(s) for filling stations:** Funded by the concessioner. The infrastructure costs for the hydration station were estimated at approximately \$3,000 for its installation. Operational costs depend on usage, but are estimated by the concessioner to also be negligible.

**Contractual implications on concessioners, including considerations of new leaseholder surrender interest or possessory interest:** N/A

**Operational costs of filling stations including utilities and regular public health testing:** Operational costs depend on usage, but are estimated by the concessioner to be negligible. Federal and State health inspections occur twice a year – U.S. Public Health Service and South Dakota Department of Health. No issues have been reported since the refill station was installed in July, 2012.

**Cost and availability of BPA-free reusable containers:** Since implementing the water refill station, visitors have the opportunity to use a reusable water bottle they brought with them, or they can purchase a reusable container available to them in a variety of styles featuring Mount Rushmore National Memorial, are BPA-free, and are available in a variety of price ranges – from the more affordable models in the \$5.00 to \$8.00 range upwards to a more deluxe stainless steel model for approximately \$15.00.

**Effect on concessioner sales revenue:** In 2012, the concessioner sold \$64,000 in bottled water (hydration station placed into service July, 2012). In the same year, the concessions also sold SmartWater but did not track its sales separately. The best approximation according to concessioner’s records – increased sales of SmartWater by \$35,000 in 2013. Sold \$2,700 in water bottles. Net effect of removing bottled water was a decrease in revenue of approximately \$26,300.

**Availability of water within concession food service operations:** The hydration station was placed into service July, 2012. Since implementing the water refill station, visitors have the opportunity to request a washable glass or a bio-based plastic glass to fill at the water refill station; use a reusable water bottle they brought with them, or they can purchase a reusable container available to them in a variety of styles featuring Mount Rushmore National Memorial, are BPA-free, and are available in a variety of price ranges – from the more affordable models in the \$5.00 to \$8.00 range upwards to a more deluxe stainless steel model for approximately \$15.00. Enhanced bottled water is also available for purchase.

**Visitor education in the park and online so that visitors may come prepared with their own water bottles:** The park and concession partner work in concert to proactively educate visitors on the importance of using the hydration station, and the park and partner’s recycling and other “green” program efforts currently in place or being developed. Educational and promotional efforts have focused on the benefits of the reusable

containers and the use of the hydration station, the environmental impacts of their purchasing decisions, and the rationale behind the reduction of the sale of non-enhanced water in plastic bottles.

**Results of consultation with NPS Public Health Office:** Water refill station must be NSF approved and must not have cross connections. Also must be kept clean and sanitary. USPHS conducts annual inspections. No concerns with availability of water for visitors.

**A sign plan so that visitors can easily find filling stations:** MORU is currently in the process of re-issuing its commercial services/concessions contract for all visitor services at the Memorial effective October 15, 2016. A sign plan will be submitted for the Service's review and approval. Signage currently exists in the food and beverage facility promoting the availability of the refill station. See signage example attached.

**Safety considerations for visitors who may resort to not carrying enough water or drinking from surface water sources with potential exposure to disease:** N/A - Mount Rushmore National Memorial has a concentrated developed area with only a small trail system. NPS team members, as well as concession employees, are trained to recognize visitors experiencing possible health issues and to contact MORU Dispatch to deploy Park Rangers to assist and/or call for assistance.

**A system for annual evaluation of the program, including public response, visitor satisfaction, buying behavior, public safety, and plastic collection rates:** Concession contract requires various reports from concession operation that help the Service evaluate the program, including visitor comments and/or complaints, recycling and solid waste, etc., annual inspections by public health officials, periodic reviews by NPS, Annual Overall Rating.

**Results of consultation with concessioners and cooperating associations:** N/A

**Timeline of phase in period:** N/A – Concessioner consulted with the Service prior to discontinuing sale of non-enhanced bottled water. This reduction effort was initiated by the concessioner and is encouraged and supported by the Park. Enhanced bottled water options continue to be available. Visitors have the opportunity to access water at the refill station as noted above.



**POLICY MEMORANDUM 11-03 (dated December 14, 2011)**

**Subject:** Disposable Plastic Water Bottle Recycling and Reduction

**ANALYSIS:**

**WIND CAVE NATIONAL PARK**

Clarification: At Wind Cave National Park (WICA) there has not been a complete elimination of the sale of bottled water – there has been a reduction of plastic bottles in the waste stream by discontinuing the sale of “non-enhanced” bottled water only (a voluntary action requested by the Commercial Use Authorization (CUA) holder for vending machines available at WICA and approved by the Park). Enhanced water options (Vitamin Water and Gatorade) continue to be available at the Park. Visitors may also use a reusable water bottle they brought with them, or they can purchase a reusable container available to them in a variety of styles at the park Visitor Center bookstore (operated by the Black Hills Parks and Forest Association, the cooperating association), are BPA-free, and are available in a variety of price ranges.

**Amount of waste eliminated and pros/cons to overall park operations:** The Park has a waste disposed amount of 11 tons per year, based on typical municipal waste generation composition (by material, in 2013), approximately 12.8% or 1.48 tons of this are plastics. The park has a recycling program that includes paper, plastics, tin, glass and aluminum cans, and estimates that approximately .58 tons of this is plastic bottles. The park anticipates a reduction in the amount of plastic bottles in the trash and in the recycling program of 5-10% of current levels initially, increasing in the future as alternatives are promoted by the park and adopted by park visitors.

Pros:

- Decreases plastics going to the landfill.
- Decreases monetary costs to any visitor who would have purchased more than one bottle of water; and if education efforts are successful, visitors may save additional money as they continue to refill their reusable bottles after they leave the park units.
- Savings of resources used and Green House Gases (GHGs) released during the transportation of waste and recyclables and during the recycling process.
- Decreases in litter associated with disposable bottles in public areas of the park (Staff observations indicate that water bottles are routinely observed in these areas).
- Diminishes release of toxic chemicals such as bisphenol A (BPA). Toxins leached from plastics are known to have negative effects on wildlife.
- Cost to install water filling stations were borne by the National Park Service and not by the CUA.
- No impact to CUA sales revenues.
- Ample sales outlets outside the boundaries of the park that can provide bottled water for purchase.
- Increases number of sales items and revenue for cooperating association.

Cons:

- None.

**Infrastructure costs and funding source(s) for filling stations:** The infrastructure costs for the hydration station were paid for by the Park and costs approximately \$3,000. Operational costs depend on usage, but are estimated by the park to also be negligible.

**Contractual implications on concessioners, including considerations of new leaseholder surrender interest or possessory interest:** Not applicable in that there is no concessioner.

**Operational costs of filling stations including utilities and regular public health testing:** Operational costs depend on usage, but are estimated by the park to be negligible. Federal and State health inspections occur twice a year – U.S. Public Health Service and South Dakota Department of Health. No issues have been reported since the refill station was installed.



**Cost and availability of BPA-free reusable containers:** Since implementing the water refill station, visitors have the opportunity to use a reusable water bottle they brought with them, or they can purchase a reusable container available to them in a variety of styles at the park Visitor Center bookstore, are BPA-free, and are available in a variety of price ranges – from the more affordable models for \$6.50 upwards to a more deluxe stainless steel model for approximately \$26.00.

**Effect on concessioner sales revenue:** Not applicable in that there is no concessioner. The CUA holder provided a breakdown of the Sandwich vending machine that sells flavored water, PowerAde and Gatorade out of from the middle of May to the first part of October:

|       |            |
|-------|------------|
| 2012: | \$2,288.80 |
| 2013: | \$3,041.50 |
| 2014: | \$4,718.10 |
| 2015: | \$5,115.50 |

These are total sales for this machine alone, and include breakfast sandwiches, burgers, hot dogs, pizza, candy bars, granola bars, etc., as well as flavored waters, Gatorade and PowerAde. Many variables are factors in the sales with this machine, weather, attendance at the cave, gas prices, etc., but the gross sales revenues show a significant increase since the installation of the filling station and the switch from plain water product to enhanced water products. The CUA does not show any effect on sales revenue as a result of the change in policy.

**Availability of water within concession food service operations:** Not applicable in that there is no concessioner. The hydration station was placed into service May 2012 on the main floor of the Visitor Center. Since implementing the water refill station, visitors have the opportunity to use a reusable water bottle they brought with them, or they can purchase a reusable container available to them in a variety of styles. Enhanced bottled water is also available for purchase. There is another water fountain downstairs in the main Visitor Center that visitors can use.

**Visitor education in the park and online so that visitors may come prepared with their own water bottles:** The park works to proactively educate visitors on the importance of using the hydration station, and the park and partner's recycling and other "green" program efforts currently in place or being developed. Educational and promotional efforts have focused on the benefits of the reusable containers and the use of the hydration station, the environmental impacts of their purchasing decisions, and the rationale behind the reduction of the sale of non-enhanced water in plastic bottles.

**Results of consultation with NPS Public Health Office:** Water refill station must be NSF approved and must not have cross connections. Also must be kept clean and sanitary. USPHS conducts annual inspections. No concerns with availability of water for visitors.

**A sign plan so that visitors can easily find filling stations:** The water hydration station is located in a small visitor center lobby and is visible to anyone entering the building. There is no sign or sign plan available at this time.

**Safety considerations for visitors who may resort to not carrying enough water or drinking from surface water sources with potential exposure to disease:** WICA has over 30 miles of trails to explore prairie grasslands and ponderosa forest. Park website and park newspaper explains the need to carry your own water for these hikes. NPS staff is trained to recognize visitors experiencing possible health issues and to contact park dispatch to deploy Park Rangers to assist and/or call for assistance.

**A system for annual evaluation of the program, including public response, visitor satisfaction, buying behavior, public safety, and plastic collection rates:** Park staff will evaluate the program, including visitor comments and/or complaints, recycling and solid waste, etc., annual inspections by public health officials, periodic reviews by NPS, Annual Overall Rating. The park will also track the sales of refillable water bottles at the bookstore, and track the usage of the water bottle filling station through the installed digital counter. Both of these usage data provide an indication of the number of disposable water bottles that have been reduced as a result of the program.

The park bookstore water bottle sales for 2014 & 2015:  
2014 – 298 bottles  
2015 – 421 bottles

The water bottle filling station digital counter recorded 32,315 fill ups as of 2/4/16 since it was installed in May, 2012.

**Results of consultation with concessioners and cooperating associations:** Not applicable in that there is no concessioner. The cooperating association did not discontinue sales and never offered bottled water for sale. The CUA was consulted and voluntarily agreed to replace plain water product previously sold in two vending slots in one vending machine, with an enhanced water product.

**Timeline of phase in period:** The exchange of products occurred in 2012, the water bottle filling station was installed in 2012. The CUA holder consulted with the Service prior to discontinuing the sale of non-enhanced bottled water and replacing this product with an enhanced bottled water product. This reduction effort was initiated by the concessioner and is encouraged and supported by the Park. Enhanced bottled water options continue to be available. Visitors have the opportunity to access water at the refill station as noted above.

## **Biscayne National Park – Analysis of Potential Impacts/Effects of Plastic Water Bottle Ban on Park Operations, Concession Operations, and Cooperative Associations**

### **1. Amount of waste eliminated and pros/cons to overall park operations**

Biscayne National Park (BISC) has a park wide recycling program that includes paper, plastic, aluminum, and glass products which account for approximately 50% of BISC's overall solid waste. In 2015 BISC recycled 26,000 pounds of material.

Florida National Parks Association (Association), BISC's cooperating association, operates a bookstore at the park adjacent to the park Visitor Center. Waste products generated through their activities are included in BISC's waste stream and appropriate items (glass, paper, plastic, and aluminum) are recycled and reported through BISC's recycling efforts. The Association is authorized, via a Commercial Use Authorization, to sell limited convenience items. The Association's bookstore does not sell disposable bottled water but does sell reusable water bottles. The Association voluntarily chose to not sell bottled water as a sale item several years ago to be environmental friendly. BISC has a water bottle refill station available to the public located outside the bookstore and adjacent to the primary Visitor Center.

BISC currently does not have a current, active concession in the park. The prior concession contract was terminated in February 2013; therefore no waste is being generated from concession activities at this time. The park is actively working on issuing a new prospectus. The new contract has no required retail in the contract but does authorize limited retail aboard boat tours. BISC has proposed a ban on the sale of bottled water in the contract.

#### **Pros:**

- Maintains the park's current status of not contributing plastic bottled water going to a landfill, items which are not collected in the park's recycling program.
- Decreases monetary costs to any visitor who would have purchased more than one bottle of water from the Association; and if our education efforts are successful, visitors may save additional money as they continue to refill their reusable bottles after they leave the park units.
- Savings of resources used and Green House Gases (GHCs) released during the production, delivery, and transportation of waste and recyclables and during the recycling process.
- By providing education the park hopes to decrease litter associated with disposable bottles within picnic areas, mangrove shoreline and beaches (Staff observations indicate that water bottles are routinely observed in these areas and require additional staff time for collection and disposal).
- Diminishes release of toxic chemicals such as bisphenol A (BPA). Toxins leached from plastics are known to have negative effects on wildlife.
- Reduces risk of plastic bottle ingestion. Birds, rodents, larger mammals, and marine reptiles (sea turtles) are known to be attracted to plastic bottles. Animals chew and

inadvertently swallow plastic pieces seeking food. It is well documented that ingested plastic can become lodged in throats creating a choking hazard and/or can create blockages in digestive tracks.

Cons:

- Bottled water can be a high profit margin item for the park concessioners. Currently BISC does not have any sales of bottled water within the park boundaries, but this could have a very minor effect in the future concessions contract profitability if the sale of reusable bottle sales (lower profit margin) do not make up for this high profit margin item, the future concessioner could incur some financial loss. (See #6 for additional analysis).
- A perceived risk could occur related to visitors being dehydrated as a result of not purchasing bottled water but reasonably priced alternatives will be available at both our Association and concessioner operations.
- Costs associated with the design and/or purchase of refillable water bottles and providing them as a sales item may increase operating costs.

**2. Infrastructure Costs and funding source(s) for filling stations**

BISC installed 2 new water filling stations in FY 2014. Total installation and equipment cost was \$2,800. BISC used Concession Reimbursables project fund source to cover expenses.

**3. Contractual implication on concessioners, including considerations of new leaseholder surrender interest or possessory interest**

BISC does not have a current concession contract. The new Concession Prospectus is currently under review, and expected for release this spring with an anticipated start date of October 1, 2016.

**4. Operational costs of filling stations including utilities and regular public health testing**

The park estimated that it will spend about \$113 a year on each filling station, which includes one filter change per year and annual water quality sampling. With a total of 2 stations, that is a total of \$226 per year.

**5. Cost and availability of BPA-free reusable container**

The Association currently sells BPA-free reusable bottles for between \$8.50 to \$12.99 depending on printing/style. They are actively working on acquiring additional, lower price options for their park bookstore.

**6. Effect on concessioner and cooperating association sales revenue**

The Association does not sell bottled water at the park's bookstore. There would be no change in current revenue if BISC implemented the bottled water ban. Concession tours will be required to provide potable water in large multi-gallon coolers and riders encouraged to use reusable water bottles.

**7. Availability of water with concessioner food service operations**

The Association provides limited convenience items at the bookstore. Drinking water can be obtained at BISC by purchasing a water bottle and filling at the two water refilling station and other various drinking fountains within the park.

**8. Visitor Education in the park online so that visitors may come prepared with their own water bottles**

Education of park visitors regarding the use of water filling stations and reusable water bottles has been limited. Various educational ideas have been discussed. BISC would work with both our newly selected concessioner, partners, and cooperating association to implement the following:

- Provide information about this program on the concession/cooperating association websites and social media
- Provide signs on refrigerated cabinets where bottled drinks are available
- Place signs on merchandise stands identifying the availability of reusable water bottles and purpose of this program
- Provide information during the tour reservation process prior to visitors arriving to the park
- Provide information within printed publications related to these operations

**9. Results of consultation with NPS Public Health Office**

Consulted with Regional Public Health Consultant during this analysis. Regional Public Health Consultant offered recommendation on water filling station maintenance and approved the project.

**10. A sign plan so that visitors can easily find filling stations**

Filling stations have already been installed at the high traffic visitor use areas within BISC. These stations are placed in prominent locations at the front of the facilities, adjacent to primary entry points. Language regarding their location will be placed on printed material and signs within buildings where reusable water bottles and beverages are sold.

**11. Safety considerations for visitors who may resort to not carrying enough water or drinking from surface water sources with potential exposure to disease**

Filling station locations have been chosen specifically to provide immediate water access to all park visitors which include filling stations and water fountain combined. These locations provide the appropriate amount of water to meet the needs and uses of these operations. Water filling stations are connected to municipal water supply, which substantially reduces the health risk to park visitors. Water stations would be inspected through regular health inspections during scheduled Public Health Assessments to minimize health risks.

**12. A system for annual evaluation of the program, including public response, visitor satisfaction, buying behavior, public safety, and plastic collection rates**

On an annual basis the park would monitor and collect the following data:

- Visitor satisfaction/public response by using visitor comment forms (Public Response and Visitor Satisfaction).

- Concession staff would track incidents related to water availability and dehydration associated with patrons of their services (Public Safety).
- Safety Officer/NPS Regional Public Health Consultant would log any safety issue related to water suitability or availability (Public Safety)
- Concession/Cooperating Association would track sales (Buying Behavior).
- Facilities Management and Concession staff would track collection rates (Collection Rates).

A position at the park would be designated the “project manager” to collect all of the data and evaluate the data on an annual basis.

### **13. Results of consultation with concessioners and cooperating associations**

Discussions with included the development of alternative products that are both sustainable and affordable (various price points) in order to allow the organizations an opportunity to recoup potential revenue currently associated with bottled water sales. The Association is supportive of the ban and voluntarily stopped the sale of this item several years ago.

### **14. Timeline of phase in period**

If approved, the park would immediately inform the Association of the forthcoming ban on the sale of water in individual disposable container. Since the Association does not currently sell disposable bottled water, the effect would be minimal and the Association is supportive of making the ban official.

The park would ensure the forthcoming concession contract would reflect the decision on the bottled water ban.



# United States Department of the Interior

## NATIONAL PARK SERVICE

Fort Raleigh National Historic Site Wright Brothers National Memorial

Cape Hatteras National Seashore  
1401 National Park Drive  
Manteo, NC 27954  
252-473-2111



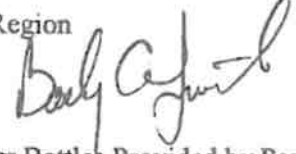
IN REPLY REFER TO:

C46 (CAHA-S)

MAY 29 2013

Memorandum

To: Gordon Wissinger, Acting Regional Director, Southeast Region

From: Barclay C. Trimble, Superintendent, Outer Banks Group 

Subject: Request of Approval to Eliminate the Sale of Plastic Water Bottles Provided by Park Concessioners

On December 14, 2011, Director Jarvis issued Policy Memorandum 11-03, *Recycling and Reduction of Disposable Plastic Bottles in Parks*. The policy stated "Where appropriate, superintendents may request approval from their regional director to eliminate the sale of water in disposable plastic bottles by analyzing and addressing the following factors - in writing." By copy of this memorandum, the Outer Banks Group is requesting regional approval to eliminate the sale of plastic water bottles from concession operations at Cape Hatteras National Seashore (Seashore).

Significant environmental and monetary costs are associated with the removal of litter, transport of waste and recyclables, disposal of non-biodegradable plastics in landfills, and recycling of plastics. As a fiscally responsible, Climate Friendly Park, the Seashore is interested in minimizing all of these cost and believes that the most effective way to do so would be to eliminate the sale of water packaged in individual disposable containers.

While we realize that a ban on the sale of water in disposable containers is only one of the actions that can be taken, we have just begun an education program intended to increase visitor use of refillable water bottles and decrease dependence on water sold in disposable plastic containers. The attached evaluation and analysis has determined that eliminating the sale of plastic water bottles would result in minimal impact to concessioner's gross sales revenue because disposable bottled water makes up a minimal percentage (0.3% for Oregon Inlet Fishing Center and 1.2% for Avon Fishing Pier) of total gross revenue. In addition, for 2013 our cooperative association has **created/purchased** reusable water bottles and these sales items are creating a successful revenue **stream** while still providing a safe and enjoyable experience.



For these reasons, we respectfully request permission to eliminate the sale of water packaged in individual disposable containers. Attached please find the required analysis of the potential impacts/effects of a ban on the sale of water in individual disposable containers in the parks per the Director's policy memorandum.

Attachments

Concur: 

Date: 6/25/13



## **Outer Banks Group - Cape Hatteras National Seashore, Fort Raleigh National Historic Site, Wright Brothers National Memorial – Analysis of Potential Impacts/Effects of Plastic Water Bottle Ban on Park Operations, Concession Operations, and Cooperative Association**

### **1. Amount of waste eliminated and pros/cons to park concession operations.**

The Outer Banks Group (Group) has a parkwide recycling program that includes paper, plastic, aluminum, and glass products, which accounts for 30% of the Group's overall solid waste. In 2012, the Group recycled 97 tons of material.

Eastern National (Eastern), which is the Group's cooperating association, operates visitor center bookstores at all three parks. Waste products generated through their activities are included in the Group's waste stream and appropriate items (glass, paper, plastic, and aluminum) are recycled and reported through the Group's recycling efforts.

Two concessioners operate within Cape Hatteras National Seashore (Seashore), and they include Oregon Inlet Fishing Center, Inc. operating the Oregon Inlet Fishing Center (OIFC) and E.W.N. Development Company operating the Avon Pier (Avon). Cape Hatteras Fishing Pier, Inc. (Frisco Pier) is an expired contract and is not currently operating within the park but concessioner facilities are still located within the park boundaries and possessory interest purchase of the assets has not occurred. Both operating concessioners are responsible for gathering and disposing of solid waste generated by their operations including recyclable material. Data is not available related to the overall solid waste generated by these concessioners; however, based on sales, approximately 8,400 and 2,000 water bottles are sold annually from OIFC and Avon respectively. By eliminating the sale of concessioner provided water bottles, a reduction in the amount of solid waste going to the landfill will occur; however, an estimated percentage of reduction cannot be determined since the Group's solid waste contractor cannot provide waste information.

#### **Pros:**

- Decreases plastics going to the landfill.
- Decreases monetary costs to any visitor who would have purchased more than one bottle of water at the OIFC or Avon; and if our education efforts are successful, visitors may save additional money as they continue to refill their reusable bottles after they leave the park units.
- Savings of resources used and Green House Gases (GHCs) released during the transportation of waste and recyclables and during the recycling process.
- Decreases in litter associated with disposable bottles along highways, waterways, and beaches (Staff observations indicate that water bottles are routinely observed in these areas).
- Diminishes release of toxic chemicals such as bisphenol A (BPA). Toxins leached from plastics are known to have negative effects on wildlife.
- Cost to install water filling stations would be borne by the National Park Service and not by concession.
- Ample sales outlets outside the boundaries of all three units that can provide bottled water for purchase.

Cons:

- Bottled water is a high profit margin item for the park concessioners. If reusable bottle sales (lower profit margin) do not make up for this, concessioners and partners could incur some financial loss. (See #6 for additional analysis).
- A perceived risk could occur related to visitors being dehydrated as a result of not purchasing bottled water.
- Costs associated with the design and/or purchase of refillable water bottles and providing them as a sales item may increase operating costs.

## **2. Infrastructure Costs and funding source(s) for filling stations**

Suitable locations have been identified at OIFC and Avon for the placement of water filling stations. These stations would be installed along the store front of these locations and require only minimal installation efforts. The Seashore has identified appropriate procurement sources to purchase water filling stations for OIFC and Avon. Total cost is estimated to be \$12,300 with funding provided by the Seashore's concessions franchise fees. Additional filling stations will also be installed throughout the park units, using a variety of fund sources, to provide easy access to water in high traffic visitor areas.

## **3. Contractual implications on concessioners, including considerations of new leaseholder surrender interest or possessory interest**

Sec 2(b) of the concessions contracts for Oregon Inlet Fishing Center, Inc. (OIFC), Avon-Thornton Limited Partnership, now E.W.N. Development Company (Avon Pier), and Cape Hatteras Fishing Pier, Inc. (Frisco Pier) states: "The Director reserves the right to determine and control the nature, type and quality of the merchandise and services described herein to be sold or furnished by the Concessioner within the Area."

OIFC is the park's biggest seller of disposable bottled water and currently the only concessioner selling reusable bottled water containers. Their initial contract term was set to expire on December 31, 1999. The concessionaire is under a one year continuation of service set to expire on December 31, 2013. The new Concession Prospectus is currently under WASO review, and expected for release this spring with an anticipated award date of January 1, 2014.

Avon's initial contract term was set to expire on December 31, 1999. The concessioner is under a one year continuation of service set to expire on December 31, 2013. The new Concession Prospectus is currently under draft, and expected for release next spring with an anticipated start date of January 1, 2015.

Frisco Pier has an expired contract as of January 1, 2012, which has not been renewed. The Seashore is in ongoing discussions to close out the contract with the existing concessioner and cease commercial operations permanently in this location.

The Seashore expects to include language in all new Concession Contracts eliminating the sale of disposable bottled water. OIFC and Avon have had discussions with the Seashore's Concessions Management Specialist regarding the removal of disposable water bottles, and

at this time the Seashore does not anticipate either new leasehold surrender interest in the new Contracts or possessory interest in the current Contracts.

**4. Operational costs of filling stations including utilities and regular public health testing**

The park estimates that it would spend about \$85 a year on each filling station, which includes routine water quality sampling. Total operating costs are expected to be \$175 for two stations. Similar cost will be associated with the other units installed throughout the park and these cost are comparable to current cost associated with replacement/rehab of existing water fountains, spigots, etc., that will be replaced with the new filling stations.

**5. Cost and availability of BPA-free reusable containers:**

The lowest priced reusable bottle sold by OIFC is \$7.50 and it is BPA-free. Only OIFC sells BPA-free, reusable, souvenir bottles. Bottled water, sold by the Concessioner, ranges from \$0.59 per bottle for a 16oz bottle to \$1.99 for a 1-liter bottle.

Eastern has never sold plastic water bottles at the Group; however, they have carried a 20 oz. metal bottle until March 2013 when it was replaced by a stainless steel, 24 oz. bottle at a cost of \$19.95.

**6. Effect on concessioner and cooperating association sales revenue**

Sales information for our concessioners and partners is provided below. Our belief, based on the provided data, is that the concessioners will not suffer a substantial loss in gross sales revenue because disposable bottled water makes up a small percentage of total general merchandise revenue. The sale of reusable water bottles also has the potential to make up some of the lost revenue from eliminating the sale of disposable water bottles.

**Avon Fishing Pier**

Avon continues to sell bottled water and does not currently provide any reusable water bottle options within their retail operation. The number of bottled water containers sold is provided below; however, actual water bottle sales revenue was not provided by Avon. Estimated water bottle revenue based on an estimated retail amount of \$1.99 per bottle.

|  | 2010    | 2011    | 2012    |
|--|---------|---------|---------|
| <b>Bottled Water Sold</b>                      | 2,067   | 1,974   | 2,084   |
| <b>Estimated Gross Revenue for Water Sales</b> | \$4,113 | \$3,928 | \$4,147 |
| <b>% of Total Gross Revenue</b>                | 1.2%    | 1.3%    | 1.2%    |

**Oregon Inlet Fishing Center**

The OIFC is the largest provider of bottled water in the park. According to their records, OIFC has seen sales for bottled water decrease from 2011 to 2012 by approximately 768 units sold, but they also experienced a decrease in the number of reusable water bottles sold by approximately 12 units sold.

|                                      | 2011    | 2012    |
|--------------------------------------|---------|---------|
| <b>Bottled Water Sold</b>            | 8,839   | 8,071   |
| <b>Gross Revenue for Water Sales</b> | \$9,570 | \$8,965 |
| <b>% of Total Gross Revenue</b>      | 0.43%   | 0.3%    |

|                               |       |       |
|-------------------------------|-------|-------|
| <b>Reusable Water Bottles</b> | 26    | 14    |
| <b>Gross \$</b>               | \$180 | \$105 |

|  | Most Expensive | Least Expensive |
|--|----------------|-----------------|
| <b>Reusable Water Bottle Prices</b>    | \$7.50         | \$7.50          |
| <b>Disposable Bottled Water Prices</b> | \$1.99         | \$0.59          |

**Eastern National Cooperating Association**

Reusable water bottles are sold by Eastern and available at the Group's five visitor centers. Plastic water bottles have not been sold by Eastern at the Group; however, they have carried 20 oz. metal bottles until March 2013 when it was replaced by a stainless steel, 24 oz. bottles at a cost of \$19.95. Both bottles have a sales price of \$19.95.

|                               | 2012    |
|-------------------------------|---------|
| <b>Reusable Water Bottles</b> | 236     |
| <b>Gross \$</b>               | \$4,708 |

**7. Availability of water within concessioner food service operations**

Avon and OIFC are fishing and charter boat operations and do not provide food service operations in the form of restaurants, food counters, or cafeterias. However, they provide pre-packaged food, beverages, and fountain drinks. Water can be obtained at OIFC through a water dispenser located at the fountain drink machine. Drinking water is not available at Avon other than through the purchase of bottled water.

**8. Visitor Education in the park and on-line so that visitors may come prepared with their own water bottles**

Education of park visitors regarding the use of water filling stations and re-usable water bottles has been limited. Various educational ideas have been discussed with the current concessioner. The Seashore would work with both concessioners and our cooperating association to implement the following:

- provide information about this program on the concession/cooperating association websites
- provide signs on refrigerated cabinets where bottled drinks are available
- place signs on merchandise stands identifying the availability of reusable water bottles and purpose of this program
- provide information during the charter booking process prior to visitors arriving to the park
- provide information within printed publications related to these operations

The Seashore would include information about the filling stations and our reusable water bottle promotion in the park newspaper, *In the Park*, and on all filling stations. A site bulletin would be developed and made available on-line and throughout the Group. Information on the program would be put to the media in a news release and posted on the Group's News Release pages. The Group would develop a webpage dedicated to the use of filling stations and the reusable water bottle program. This site would be updated to reflect that water in individual disposable containers is no longer sold at our concession facilities/cooperating association; and a link to this page would be featured on the Group's individual home page to ensure easy access to information about the change.

#### **9. Results of consultation with NPS Public Health Office**

Seashore staff consulted with the NPS Public Health Office regarding the removal of plastic water bottles from the Group's waste stream and any concerns regarding the installation of filling stations throughout the Group. The NPS Public Health Office expressed support of this effort and commended the park for taking a proactive approach to managing its waste stream. Public health officials cited specific requirements that needed to be considered when installing filling stations that included routine water quality sampling and cleaning as conducted for other potable drinking water locations throughout the Group. The Group will incorporate these requirements for all filling stations installed.

#### **10. A sign plan so that visitors can easily find filling stations**

Current plans call for the placement of filling stations at concession operations/cooperating association/high traffic visitor use areas within the Group. These stations would be placed in prominent locations either at the front of the facilities or adjacent to primary entry points. Language regarding their location would be placed on printed material and signs within buildings where reusable water bottles and beverages are sold. Locations of these facilities would be placed on the park map in the *In the Park* newspaper, and a site bulletin.

#### **11. Safety considerations for visitors who may resort to not carrying enough water or drinking from surface water sources with potential exposure to disease**

Filling station locations have been chosen specifically to provide immediate water access to all patrons of the Avon and OIFC concessions and other high visitor use areas. These locations provide the appropriate amount of water to meet the needs and uses of these operations and will in most cases replace water drinking fountains which are not currently designed to allow for filling of reusable water bottles. Water filling stations would be connected to a municipal water supply, which substantially reduces the health risk to park visitors. Water stations would be inspected through regular health inspections to minimize

health risks. Additionally, concession operations would be responsible for regular cleaning of the filling stations to meet required health standards.

**12. A system for annual evaluation of the program, including public response, visitor satisfaction, buying behavior, public safety, and plastic collection rates**

On an annual basis the park would monitor and collect the following data:

- Visitor satisfaction/public response by using visitor comment forms (Public Response and Visitor Satisfaction).
- Concession staff would track incidents related to water availability and dehydration associated with patrons of their facilities (Public Safety).
- Safety Officer/NPS Public Health Representative would log any safety issue related to water suitability or availability (Public Safety).
- Concessions/Cooperating Association would track sales (Buying Behavior).
- Concession Specialist and Concession staff would track collection rates (Collection Rates).

The Seashore's Concession Specialist would be designated as the "project manager" to collect all of the data and evaluate the data on an annual basis.

**13. Results of consultation with concessioners and cooperating associations**

Consultation with the two operating concessioners located in the park began on an informal scale in January 2013. These discussions included the development of alternative products that are both sustainable and affordable (various price points) in order to allow the organizations an opportunity to recoup revenue currently associated with bottled water sales which is minimal as Avon has a seasonal closure in December and does not open again until April so the inventory is depleted. OIFC is a year-round operation with a slow season that begins in late fall and ends in mid to late April, so the inventory during this period is also minimal. Both concessioners were unsupportive of the idea, because of the amount of competition in the local community, while the cooperating association is very supportive of the concept and already developed various designs and types of bottles for sale.

**14. Timeline of phase in period**

Prospectuses are currently under development for both the Avon and OIFC concession operations. As a result, the Seashore would like to eliminate the sale of disposable bottled water beginning with the initiation of the new contracts. The OIFC prospectus is expected to be complete and available for bid beginning in June 2013 with a contract award and new operation beginning January 2014. The Avon prospectus is expected to be completed and open for bid in spring 2014 and a new contract awarded in early 2015. Implementation throughout the three parks would begin in early 2014.

The Group anticipates being able to install water filling stations by winter 2013-2014 when one concessioner is closed, the other has very minimal operations and visitation to all the parks is low. This would allow installation of the stations to take place during a time that would cause the least impact to park visitors and concessioners.

Information about the concessioner's reusable water bottle program would be developed this

fall and made available for posting on the Seashore's webpage, printed in the Seashore's newspaper, and available to concessioner's for printing prior to their next operating season.

If approved, the Seashore would immediately inform concessioners of the forthcoming ban on the sale of bottled water, and would coordinate with concessioners and cooperators to ensure they could sell, transfer, or return any product they already have in stock which we expect is very minimal. The Seashore would also notify WASO and SERO concession programs to make necessary modifications to the concession prospectuses. The WASO and SERO concession staff is aware of this direction by the Seashore and are ready to incorporate any changes to the respective prospectus.



## United States Department of the Interior

NATIONAL PARK SERVICE

Fort Sumter National Monument  
1214 Middle Street  
Sullivan's Island, South Carolina 29482  
(843) 883-3123



Fort Moultrie  
1214 Middle Street  
Sullivan's Island, South Carolina

Charles Pinckney National Historic Site  
1254 Long Point Road  
Mt. Pleasant, South Carolina

IN REPLY REFER TO:

26 October 2015

Memorandum

To: Regional Director, Southeast Region

From: Superintendent, Fort Sumter National Monument

Subject: Request for Approval to Eliminate the Sale of Water in Individual Disposable Containers

On December 14, 2011, Director Jarvis issued policy on the recycling and reduction of disposable plastic water bottles in parks. The policy stated "Where appropriate, superintendents may request approval from their regional director to eliminate the sale of water in disposable plastic bottles by analyzing and addressing the following factors -in writing." By copy of this memorandum, Fort Sumter National Monument (FOSU) is requesting approval to eliminate the sale of water in individual disposable containers (under one gallon) such as plastic water bottles and boxed water.

Fort Sumter National Monument has experienced an increasing amount of litter associated with disposable plastic bottles along trails, walkways, forts, and ferry boats. Significant environmental and monetary costs are associated with the removal of litter, transport of waste and recyclables, disposal of non-biodegradable plastics in landfills, and recycling of plastics. As a fiscally responsible, Climate Friendly Park, FOSU is interested in minimizing all of these costs and believes that the most effective way to do so would be to eliminate the sale of water packaged in individual disposable containers (of less than one gallon).

For these reasons, we respectfully request permission to eliminate the sale of water packaged in individual disposable containers of less than one gallon in FOSU. Attached please find the required analysis of the potential impacts/effects of a ban on the sale of water in individual disposable containers in the park per the Director's policy memorandum.





Sincerely,

Acting - Scott Mopes

Tim Stone  
Superintendent, Fort Sumter National Monument

Attachments

Concur: Stan Custer

Date: OCT 28 2015

## **Fort Sumter National Monument, Charles Pinckney National Historic Site – Analysis of Potential Impacts/Effects of Plastic Water Bottle Ban on Park Operations, Concession Operations, and Cooperative Associations**

### **1. Amount of waste eliminated and pros/cons to overall park operations**

Fort Sumter National Monument (FOSU) has a park wide recycling program that includes paper, plastic, aluminum, and glass products which account for 40% of the FOSU's overall solid waste. In 2013 FOSU recycled 5.65 tons of material.

Eastern National, which is FOSU's cooperating association, operates visitor center bookstores at all four locations (Fort Sumter, Liberty Square, Fort Moultrie, and Charles Pinckney NHS). Waste products generated through their activities are included in FOSU's waste stream and appropriate items (glass, paper, plastic, and aluminum) are recycled and reported through FOSU's recycling efforts.

Fort Sumter Tours (FST) is the only authorized concessionaire within the park. Based on FY14 sales, approximately 4600 bottles were sold to visitors on the ferry to FOSU. It's impossible to know exactly how much waste from these sales is included in the park's waste stream since a portion of our visitors depart from Patriot's Point which is not a NPS site. A conservative estimate would be that 65% of waste generated by FST from water bottle sales ends up in FOSU's waste stream while 20% is recycled on the ferry itself, 10% at Patriot's Point, and 5% are taken off site and disposed of at other non-park locations.

#### **Pros:**

- Decreases plastics going to landfill which are not collected in the park's recycling program.
- Decreases monetary costs to any visitor who would have purchased more than one bottle of water from Eastern National or FST; and if our education efforts are successful, visitors may save additional money as they continue to refill their reusable bottles after they leave the park units.
- Savings of resources used and Green House Gases (GHCs) released during the production, delivery, and transportation of waste and recyclables and during the recycling process.
- Decrease in litter associated with disposable bottles within forts, picnic areas, and beaches (Staff observations indicate that water bottles are routinely observed in these areas and require additional staff time for collection and disposal).
- Diminishes release of toxic chemicals such as bisphenol A (BPA). Toxins leached from plastics are known to have negative effects on wildlife.
- Reduces risk of plastic bottle ingestion. Birds, rodents, larger mammals, and marine reptiles (sea turtles) are known to be attracted to plastic bottles. Animals chew and inadvertently swallow plastic pieces seeking food. It is well documented that ingested plastic can become lodged in throats creating a choking hazard and/or can create blockages in digestive tracks.

Cons:

- Bottled water is a high profit margin item for the park concessioners. If reusable bottle sales (lower profit margin) do not make up for this, concessioners and partners could incur some financial loss. (See #6 for additional analysis).
- A perceived risk could occur related to visitors being dehydrated as a result of not purchasing bottled water but reasonably priced alternatives will be available at both our cooperator and concessioner operations.
- Costs associated with the design and/or purchase of refillable water bottles and providing them as a sales item may increase operating costs.

**2. Infrastructure Costs and funding source(s) for filling stations**

Fort Sumter National Monument began construction of 4 new water filling stations in FY 2015, and all were completed in the same year. Total construction cost was \$9,200. FOSU used base funding received from the Southeast Regional Office (SERO). Park concessioner has agreed to install additional filling stations on the current ferry boats.

**3. Contractual implication on concessioners, including considerations of new leaseholder surrender interest or possessory interest**

Sec 3(1) of the concessions contract for Fort Sumter Tours, Inc. states: "The Director reserves the right to determine and control the nature, type and quality of the visitor service described in this CONTRACT, including, but not limited to, the nature, type, and quality of merchandise, if any, to be sold or provided by the Concession within the Area."

FST's initial contract term is set to expire December 31, 2016. The new Concession Prospectus is currently under draft, and expected for release near the end of October with an anticipated start date of January 1, 2017.

**4. Operational costs of filling stations including utilities and regular public health testing**

The park estimated that it will spend about \$113 a year on each filling station, which includes one filter change per year and annual water quality sampling. With a total of 4 stations, that is a total of \$452 per year.

**5. Cost and availability of BPA-free reusable container**

The lowest priced BPA-free reusable bottle sells for between \$1.60 and \$1.70 depending on printing. The concessioner plans to sell them for \$3.50. Currently bottled water can be purchased in the park for \$1.50 on the ferries as well as two of the four Eastern National locations.

**6. Effect on concessioner and cooperating association sales revenue**

Sales information for our concessioner and partner is provided below. Our belief, based on the provided data, is that FST will not suffer a substantial loss in gross sales revenue because disposable bottled water makes up a small percentage of total general merchandise revenue. The

sale of reusable water bottles also has the potential to make up some of the lost revenue from eliminating the sale of disposable water bottles.

**Fort Sumter Tours, Inc.**

FST is the largest provider of water in the park. According to their records FST has seen sales of bottle water increase from 2012 to 2014 by approximately 300 units sold.

|  | 2012    | 2013    | 2014    |
|--|---------|---------|---------|
| <b>Bottled Water Sold</b>                      | 4,300   | 4,250   | 4,600   |
| <b>Estimated Gross Revenue for Water Sales</b> | \$4,902 | \$4,845 | \$6,256 |
| <b>% of Total Gross Revenue</b>                | <1%     | <1%     | <1%     |

**Eastern National Cooperating Association**

Disposable water bottles are sold by Eastern and available at two of the four FOSU locations (Fort Moultrie Visitor Center and Liberty Square Visitor Center).

| <b>Liberty Square</b>           | <b>2012</b> | <b>2013</b> | <b>2014</b> |
|---------------------------------|-------------|-------------|-------------|
| Bottled Water Sold              | 15,317      | 13,832      | 16,426      |
| Gross Revenue for Water Sales   | \$21,286.01 | \$19,222.91 | \$22,825.65 |
| <b>% of Total Gross Revenue</b> | 7.58%       | 7.36%       | 8.52%       |
|                                 |             |             |             |
| <b>Fort Moultrie</b>            | <b>2012</b> | <b>2013</b> | <b>2014</b> |
| Bottled Water Sold              | 2,944       | 2,936       | 3,360       |
| Gross Revenue for Water Sales   | \$4,091.74  | \$4,081.64  | \$4,675.17  |
| <b>% of Total Gross Revenue</b> | 4.27%       | 4.19%       | 4.56%       |

**7. Availability of water with concessioner food service operations**

FST provides a limited quick service/snack bar aboard the ferry boats. Generally there is pre-packaged food, beverages, and fountain drinks. Drinking water can be obtained at FST by purchasing bottled water and from various drinking fountains on the ferry.

**8. Visitor Education in the park online so that visitors may come prepared with their own water bottles**

Education of park visitors regarding the use of water filling stations and reusable water bottles has been limited. Various educational ideas have been discussed with the current concessioner. FOSU would work with both our concessioner, partners, and cooperating association to implement the following:

- Provide information about this program on the concession/cooperating association websites
- Provide signs on refrigerated cabinets where bottled drinks are available
- Place signs on merchandise stands identifying the availability of reusable water bottles and purpose of this program
- Provide information during the charter booking process prior to visitors arriving to the park
- Provide information within printed publications related to these operations

A site bulletin would be developed and made available online and throughout FOSU. Information on the program would be distributed to the media in a news release and posted on FOSU's News Release pages. FOSU would develop a webpage dedicated to the use of filling stations and reusable water bottle program. This site would be updated to reflect water in individual disposable containers is no longer sold on the ferry boats and visitor centers; and a link to this page would be featured on the FOSU's home page to ensure easy access to information about the change.

**9. Results of consultation with NPS Public Health Office**

FOSU has consulted with NPS Public Health Office. The Public Health Office reviewed the design of the water filling stations, commented on placement of the stations to meet public needs and all aspects were found to be satisfactory. The NPS Public Health Office is fully supportive of this ban, as any concerns about public safety have been addressed.

**10. A sign plan so that visitors can easily find filling stations**

Filling stations will be placed aboard ferry boats by the concession operation and have already been installed at the high traffic visitor use areas within FOSU. These stations are placed in prominent locations either at the front of the facilities or adjacent to primary entry points. Language regarding their location will be placed on printed material and signs within buildings where reusable water bottles and beverages are sold. Locations of these facilities will be placed on the park map and site bulletin.

**11. Safety considerations for visitors who may resort to not carrying enough water or drinking from surface water sources with potential exposure to disease**

Filling station locations have been chosen specifically to provide immediate water access to all patrons of FST and park visitors which include filling stations and water fountain combined. These locations provide the appropriate amount of water to meet the needs and uses of these operations. Water filling stations are connected to municipal water supply, which substantially reduces the health risk to park visitors. Water stations would be inspected through regular health inspections to minimize health risks. Additionally, concession operations would be responsible for regular cleaning of the filling stations aboard ferry boats to meet required health standards.

**12. A system for annual evaluation of the program, including public response, visitor satisfaction, buying behavior, public safety, and plastic collection rates**

On an annual basis the park would monitor and collect the following data:

- Visitor satisfaction/public response by using visitor comment forms (Public Response and Visitor Satisfaction).
- Concession staff would track incidents related to water availability and dehydration associated with patrons of their facilities (Public Safety).
- Safety Officer/NPS Public Health Representative would log any safety issue related to water suitability or availability (Public Safety)
- Concession/Cooperating Association would track sales (Buying Behavior).
- Facilities Management and Concession staff would track collection rates (Collection Rates).

A position at the park would be designated the “project manager” to collect all of the data and evaluate the data on an annual basis.

### **13. Results of consultation with concessioners and cooperating associations**

Discussions with FST and Eastern National included the development of alternative products that are both sustainable and affordable (various price points) in order to allow the organizations an opportunity to recoup revenue currently associated with bottled water sales. Both are year-round operations with a slow season that begins in late fall and ends in mid-March. Both FST and Eastern National are supportive of the idea.

### **14. Timeline of phase in period**

In December of 2011, NPS Director Jarvis issued a service wide policy on management of disposable plastic water bottles in parks. The new policy allowed for elimination of the sale of water packaged in disposable plastic bottles with the approval of the appropriate Regional Director. After performing the required assessment of the potential impacts and effects of a disposable water bottle ban, FOSU submitted a request for approval in October 2015.

If approved, the park would immediately inform FST and Eastern National of the forthcoming ban on the sale of water in individual disposable container, and would coordinate with these partners to ensure they could sell, transfer or return any product they already have in stock. Ideally, the ban would take effect 30 days from approval. Both organizations are aware of the parks request and are supportive.



United States Department of the Interior

NATIONAL PARK SERVICE  
Mammoth Cave National Park  
P.O. Box 7  
Mammoth Cave, Kentucky 42529-0007

IN REPLY REFER TO:

A7021

Memorandum:

To: *for* Regional Director, Southeast Region

From: Superintendent, Mammoth Cave National Park

Subject: Request for Approval to Eliminate the Sale of Water in Individual Disposable Containers

On December 14, 2011, Director Jarvis issued policy on the recycling and reduction of disposable plastic water bottles in parks. The policy stated "where appropriate, superintendents may request approval from the regional director to eliminate the sale of water in disposable plastic bottles by analyzing and addressing the following factors – in writing." By copy of this memorandum, Mammoth Cave National Park (MACA) is requesting approval to eliminate the sale of water in individual plastic disposable containers.

The Mammoth Cave Hotel sold 2,904 plastic water bottles in 2014, as well as 480 plastic one-gallon water jugs. Mammoth Cave National Park is interested in reducing the amount of plastic waste it produces. Plastic water bottles make up 5.7% of all recycled commodities within the park. There are significant environmental and monetary costs associated with the removal of litter, transport of litter to landfills, and recycle centers. As an effort to work towards "Greening" our park and being fiscally responsible, Mammoth Cave National Park would like to eliminate the sale of water packaged in disposable water bottles when the new concessions contract is awarded. This contract is currently open for bids and is expected to be awarded in 2016.

We realize that a discontinuation of the sale of water in disposable containers is only one of the actions that would be taken. MACA already has an active office products recycling program; offers household recycling at all 14 housing units on the park; offers onsite composting; and has a goal to have a solid waste diversion goal of 55% by the end 2015 – greater than the DOI waste diversion goal of 50% by 2015.

For these reasons, we respectfully request permission to eliminate the sale of water packaged in individual disposable bottles. Attached please find the required analysis of the potential impacts and effects of discontinuing the sale of water sold in individual disposable water bottles per the director's policy memorandum.

Attachments

Concur:

Date: 8/17/15



## United States Department of the Interior

NATIONAL PARK SERVICE  
Mammoth Cave National Park  
P.O. Box 7  
Mammoth Cave, Kentucky 42259-0007

IN REPLY REFER TO:

A7021

### Mammoth Cave National Park Analysis of Potential Impacts/Effects of Disposable Water Bottle Ban

#### 1. Amount of waste eliminated and pros/cons to overall park operations.

Mammoth Cave National Park (MACA) could eliminate up to 5.7% of what is currently recycled.

Pros: • Decrease in plastics going to landfill. • Decrease in monetary costs to any visitor who would have purchased more than one bottle of water within the park; and if our education efforts are successful, visitors may save additional money as they continue to refill their reusable bottles after they leave the park. • Savings of resources used and Greenhouse Gases (GHGs) released during the transportation of waste and recyclables during the recycling process. • Decrease in litter associated with disposable bottles found in or around the cave. • Reduced risk of plastic bottle ingestion by birds, rodents, and larger mammals. • Diminished release of toxic chemicals such as bisphenol A (BPA). Toxins leached from plastics are known to have negative effects on wildlife. • Decrease in the amount of litter which is unsightly for visitor enjoying the natural beauty of the park.

Cons: • Bottled water is a high profit margin item for concessioners. If reusable bottle sales (lower profit margin) do not make up for this, concessioners could incur some financial loss. • Some people perceive a risk to visitors of dehydration. (Bottled water is a relatively recent retail innovation and this concern had been well addressed before its advent). Water filling stations will be installed at the park visitor center, the Cavers Camp Store, and two (2) at the Mammoth Cave Hotel. Potable water is already available in the Headquarters Campground • Reusable bottles starting at prices just a few cents above the cost of one disposable bottle of water are being sold by the concessioner, and sales in this area will most likely increase.

#### 2. Infrastructure costs and funding source(s).

The park has elected to use filling stations that are built into water fountains as one unit. Each unit cost approximately \$1500 and will be paid for by base funds. One unit has already been installed at the visitor center with additional units to be installed at the Mammoth Cave Hotel during a major renovation project that is scheduled to begin in September 2015. Potable water is currently available at several locations, in the Headquarters Campground where visitors can fill containers as needed.

#### 3. Contractual implications on concessioners.

The current MACA concessions contract is due to expire in December 2016. A new prospectus was released for bid in December 2014, and includes the disposable plastic water bottle ban as part of the operation of the new concessioner.

#### 4. Operational costs of filling stations including utilities.



The costs will be minimal since the park is installing filling stations that also serve as regular drinking fountains. These filling stations are replacing existing water fountains in public areas.

**5. Effect on Concessioner Sales Revenue.**

Following is the sales information for the current concessioner, who may or may not continue to be at MACA when the new contract is awarded. Our belief is that the new concessioner will not have a substantial loss in gross sales revenue as individual plastic water bottle sales will be replaced by reusable water bottle sales.

*The following is a summary of the water bottle sales by CONCESSOR for 2013 and 2014*

**2013 Total Sales of Disposable Water Bottles**

3127 bottles sold (*single use and gallon jugs*)

Total Sales = \$4315

**2014 Total Sales of Disposable Water Bottles Sold**

3384 bottles sold (*single use and gallon jugs*)

Total Sales = \$4673

When plastic water bottles are no longer available for purchase visitors will buy more refillable water bottles which will offset, and may even overcome the current sells of plastic water bottles.

**7. Availability of water within concessioner food service operations.**

Water is available at all three of the food services at the Mammoth Cave Hotel.

**8. Visitor Education.**

Educational opportunities will be available in the park and on websites so that visitors may come prepared with their own water bottles.

Information will be posted in the park about the filling stations, and reusable water bottle promotion will be available in the park's 2016 Visitor Guide. Information will be posted on park bulletin boards, and at the campgrounds, picnic grounds, hotel, and visitor center.

Information will be posted on the park's Content Management System under Planning Your Visit and on the homepage. The concessioner will also post information on their website to share this information with park visitors and local community members. A news release will be provided to the media with information on the ban of individual disposable water bottles prior to the ban's effective date, and will be posted on the park's News Release page.

**9. Results of consultation with NPS Public Health Office.**

The park has consulted with the US Public Health Service about the type of fill station that has been installed as well as those the park plans to install later this year. The US Public Health Service has no issues with the installation of filling stations and supports the park in this action.

**10. Sign plan.**

The park is committed to ensuring that visitors can easily find filling stations. There will be signage in place at all of the water filling stations within the park. Mammoth Cave National Park's interpretive staff will also design informational signs at the visitor center to educate the public about the environmental benefits of refilling water bottles.

#### **11. Safety considerations.**

It is critically important to ensure that visitors carry enough water so that they do not drink from surface water sources with potential exposure to disease. Fill station locations will be situated to provide immediate water access to the largest number of people who might have an immediate need. In addition, all trailheads will have informational signs encouraging visitors to carry water.

#### **12. Annual evaluation.**

It is important to incorporate a system for annual evaluation of the program, including public response, visitor satisfaction, buying behavior, public safety, and plastic collection rates.

On an annual basis the park will monitor and collect the following data:

- Visitor satisfaction/public response by using the visitor comment forms - log in complaints/compliments (Public Response and Visitor Satisfaction).
- Incidents/contacts related to water availability and dehydration (Public Safety monitored by Visitor and Resource Protection Staff).
- Safety issues related to water availability. (Public Safety monitored by Safety Officer/NPS Public Health Representative).
- Sales of reusable water bottles (Buying Behavior tracked by Concessioner).
- Collection rates (Tracked by Maintenance).

#### **13. Results of consultation with Concessioner.**

Consultation with the new Concessioner will begin as soon as the new contract is awarded. These discussions will include the development of alternative products that are both sustainable and affordable (various price points) in order to allow the organization an opportunity to recoup revenue currently associated with bottled water sales.

#### **14. Timeline of phase in period.**

In December of 2011, NPS Director Jarvis issued a service wide policy on management of disposable plastic water bottles in parks. This new policy allowed for elimination of the sale of water packaged in disposable plastic bottles with the approval of the appropriate Regional Director. After performing the required assessment of the potential impacts and effects of a disposable water bottle ban, Mammoth Cave National Park is submitting a request for approval.

If approved, the park will inform the new concessioner (when the contract is awarded) of the ban on the sale of water in individual disposable containers, and will coordinate with the new concessioner to ensure they could sell, transfer or return any product they already have in stock. The ban would take effect when the new concessions contract is awarded, in 2017.