



~ STUDENT RESEARCH REPORT ~

Team Marine’s second water audit finds dedicated maintenance crews making progress on broken and defective water fountains

By Team Marine(www.teammarine.org)

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SANTA MONICA, CA – March 17, 2013

Over the past several weeks, Team Marine has conducted a second survey of all 68 water fountains at Santa Monica High School, as a follow up to the first water fountain audit conducted last fall.

The new audit reveals progress: the number of water fountains that are entirely broken declined from 19% in our fall survey to 15% in this survey (Fig.1). The number of water fountains with defects, including broken fountains as well as fountains with restricted or excessive water flow, went from 80% last fall to 58% this spring.

These positive changes have come about due to the hard work of Santa Monica-Malibu School District maintenance crew, who worked to bring broken water fountains back on-line, and adjust the flow on other malfunctioning fountains.

Some problems do remain, however, as over half of Samohi’s water fountains are still defective or broken. Cleanliness is another issue; the

number of fountains

containing dirt or debris actually increased, from 47% in the fall survey to 53% now, but we’re hopeful that Team Marine’s research will help encourage further improvements.

In both surveys, Team Marine used a standardized methodology involving survey cards where students checked applicable codes on an index card for each of the 68 water fountains at Santa Monica High School, as well as taking a photograph of each water fountain basin along with the completed card. The following codes were used, just as in our initial survey: W (Working), B (Broken), O (Overflow), L (Low Flow), LP (Low Pressure), and D (Dirty/Debris). See Figure 2 below for the classification system used.



Team Marine Water Fountain Classification System

Every water fountain must be marked either **B (Broken)** or **W (Working)**, and then marked with any other code that applies.

Water fountains marked **L (Low Flow)**, **O (Overflow)**, and **LP (Low Pressure)** are considered **working**. A classification of **D (Dirty)** can be given to **W (Working)** and **B (Broken)** water fountains.

B	Broken Non-functioning	LP	Low Pressure Difficult to drink water or fill water bottle
L	Low Flow No visible arc	D	Dirty Dirt, debris, dust, grime, or food on faucet or in basin
O	Overflow Spills out of basin		
W	Working Water fountain is functioning (regardless of condition)		



Our concern with water fountains being broken is related to our concern with the consumption and pollution of plastic water bottles. Our experience tells us that when students don't have access to clean drinking water, they resort to buying water and other sugary beverages from vending machines.

As we noted in our last report, the average American consumes 167 plastic bottles per year, and inevitably, some of these bottles end up in the ocean causing harm to marine life. Plastics photodegrade into smaller pieces in seawater which are then mistaken as natural food by marine organisms. Other problems include entanglement and biomagnification of the toxic chemicals that cling to plastic up the food chain. As a result of human pollution, there are currently vast garbage patches in all five major ocean gyres, and 80-95% of the refuse in these patches is plastic.

Functioning water fountains were a portion of the class-action lawsuit *Williams v. California* in 2000, when the State of California was sued over issues involving insufficient school facilities and textbooks. In the settlement, the state dedicated \$1 billion to improve school facilities. Improving facilities here – including our water fountains – improves the school's standing in California and compliance with *Williams*.

Team Marine is an organization at Santa Monica High School dedicated to sound research science and environmental advocacy. Founded in 2006, students from Team Marine have been involved in science fairs and competitions, participated in lobbying the local and state governments on legislation to reduce plastic pollution, and featured in national and international news media as a result of their projects. For more information please visit www.teammarine.org.

Please see pages below for the full results of the survey. If you have any questions or would like further information, please contact student, Matthew Ware at matthewrware@gmail.com or advisor Benjamin Kay at bkay@smmusd.org.

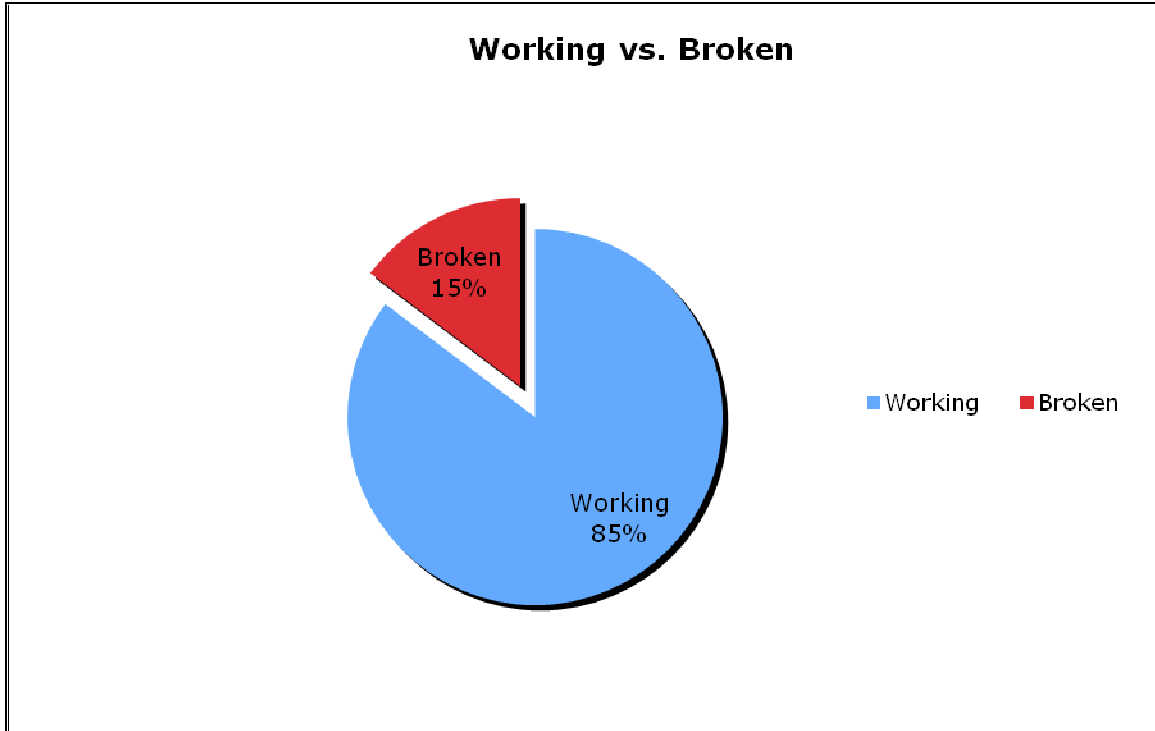


Figure 1. 15% of water fountains are broken Spring 2013, compared to 19% in Fall 2012.

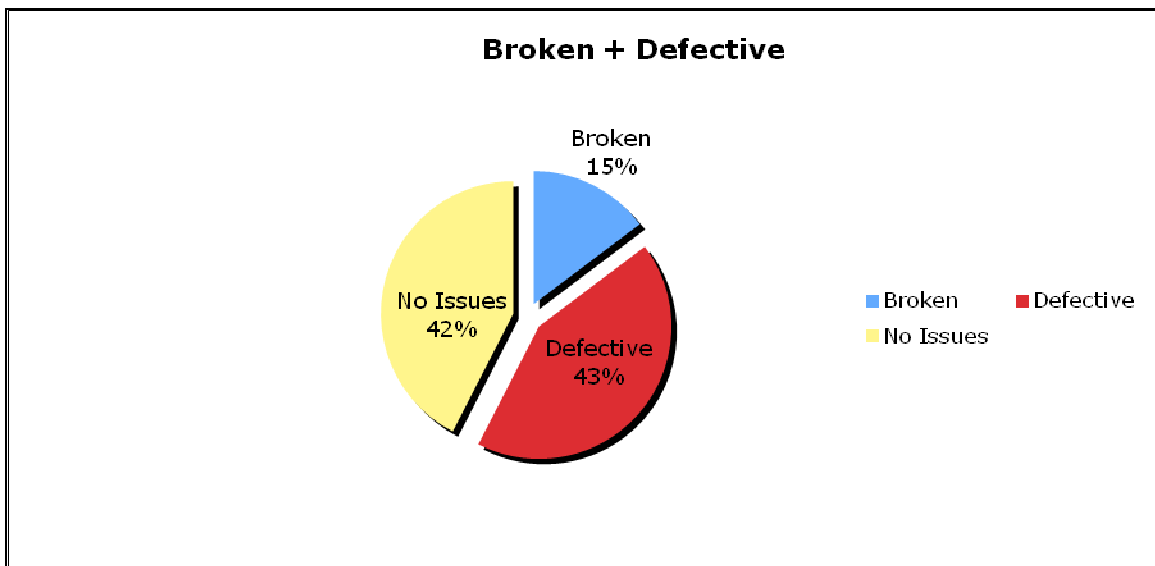


Figure 2. 43% of water fountains are defective and 15% are broken, for a total of 58% with issues, compared to 80% last semester.

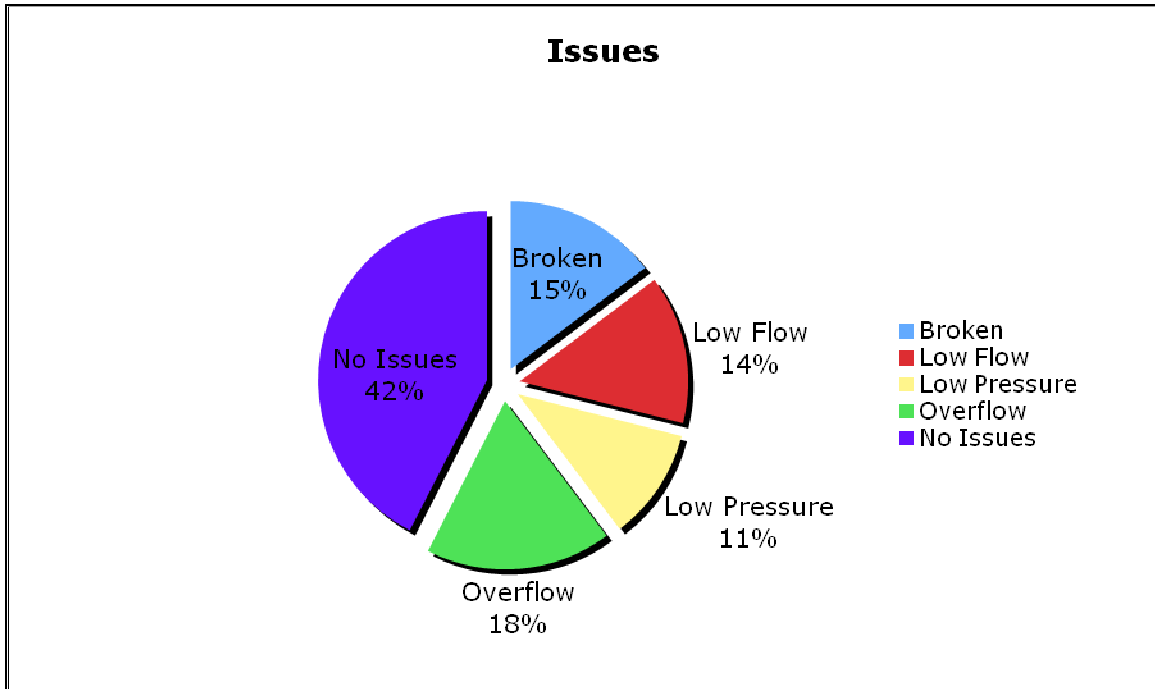


Figure 3: Complete breakdown of issues from full data set.