

Laura Osa

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WBSP Report

Spring 2020 (May 1st, 2020)

The Water Bottle Station Project Report (Spring 2020)

The Water Bottle Station Project studies 42 water bottle refill stations across Stony Brook University campus. These stations are located in both public buildings on campus and dormitory colleges. We collect data from 31 public buildings on campus and from 11 dormitory locations. Using a survey I created on Survey123, my eighteen volunteers and I survey stations on the first of each month. After the surveys are submitted, I compile and analyze the data in my spreadsheets to look at the filter color, flow strength, drain, and green ticker for each station. I observe the general trends each month for station popularity and station issues. I send the station error sheets to the Office of Sustainability. By looking at these statistics over time, I believe the stations will have less filter issues and I can determine the statistical trends of the stations each semester.

For the Spring 2020 semester, the five most popular refill stations (in order) are Melville Library (1st Floor Bathrooms), Javits, Student Activities Center, Campus Recreation (1st Floor Weights), and Chemistry. The least popular stations for this semester were Stores Warehouse, Administration (1st Floor), Sports Center Pool, and Student Health Center. I believed that the most popular locations were buildings that both students and faculty frequent, such as Melville Library and the SAC, which appears to be true. The most popular locations were not a surprise, as most of these stations were popular last semester. However, there were major inconsistencies in the data we collected due to broken green tickers. The green tickers for the Student Activities

Center and the Melville Library broke by March, creating a gap in data for these two stations. It is likely that these stations surpassed the Javits Center based on previous popularity. The least popular locations were not surprising; Stores Warehouse, Administration, Sports Center Pool, and the Student Health Center stations were unpopular. This could be caused by the distant location from the academic mall and because these locations are not frequented by students.

For the water refill stations, there were multiple common issues that were found in multiple stations. The filter status was surprisingly not the most common issue this semester, only compromising 25.8% of the refill station issues. The majority of station issues involved broken green tickers, which causes a blank number section instead of a total count for refill station fill-ups. Broken green tickers accounted for 58.1% of the station issues. Residue on the stations was also another issue, encompassing 9.7% of the station issues. Drain and flow issues also were smaller issues with the stations, both adding up to 6.4% of the station issues.

For stations that did not have a broken green ticker, I analyzed the amount of fill-ups recorded for each refill station. This semester I am labelling the numerical results from green tickers as “fill-ups” due to confusion and possible inconsistencies with the label “plastic water bottle savings.” In total for February-March 2020, Stony Brook University had 112,353 fill-ups using the Elkay water refill stations. This is a decrease in fill-ups from Fall 2019 and previous semesters due to a huge gap in data from the COVID-19 emergency. April and May were not assessed, leading to a huge decline in fill-up counts. Additionally, many green tickers broke among popular stations, causing a lower total fill-up count. This value is higher than my recorded calculations because people continue to use the broken green ticker stations. The largest amount of fill-ups recorded were with the popular stations, with the top four popular stations having around 58,000 fill-ups.

The started this project inquiring if the green filter status would change in stations if we started to send station information to maintenance. By submitting station information to maintenance, green filters in the stations continue to increase! For February 1st, approximately five public stations had yellow or red filters. By March 1st, only four stations had yellow or red filters. The specific stations with yellow or red filters varied from February to March. The broken green ticker station count increased over time, from thirteen broken green ticker stations for February 1st, to nineteen stations by March 1st with this issue. In December, 2019, the broken green tickers count was 15 stations, so there appears to be a trend of broken green tickers increasing during the winter. This is consistent with previous green ticker trends I analyzed. The data collections and communication with maintenance is making significant improvements, both on campus and with efficiency in maintenance.

The main challenges I faced this semester involved the loss of data for many stations in regards to broken green tickers and the COVID-19 crisis. As previously mentioned, many stations develop a broken green ticker over time. Sometimes at the start of the semester the green ticker is working and then breaks during the semester. Other stations have a broken green ticker for entire semesters. When looking at the incremental fill-ups from month to month, if a station's green ticker goes blank, I lose that numerical data that could be added to the total fill-up count. This was an issue particularly with popular stations this semester, in the Student Activities Center, Melville Library, and Campus Recreation. The COVID-19 crisis also served as a major loss of data for my research during the Spring 2020 semester due to the inability to pursue data collections on campus. Further, the evacuation of campus would significantly diminish fill-ups at the research stations, drastically impacting my numerical data.

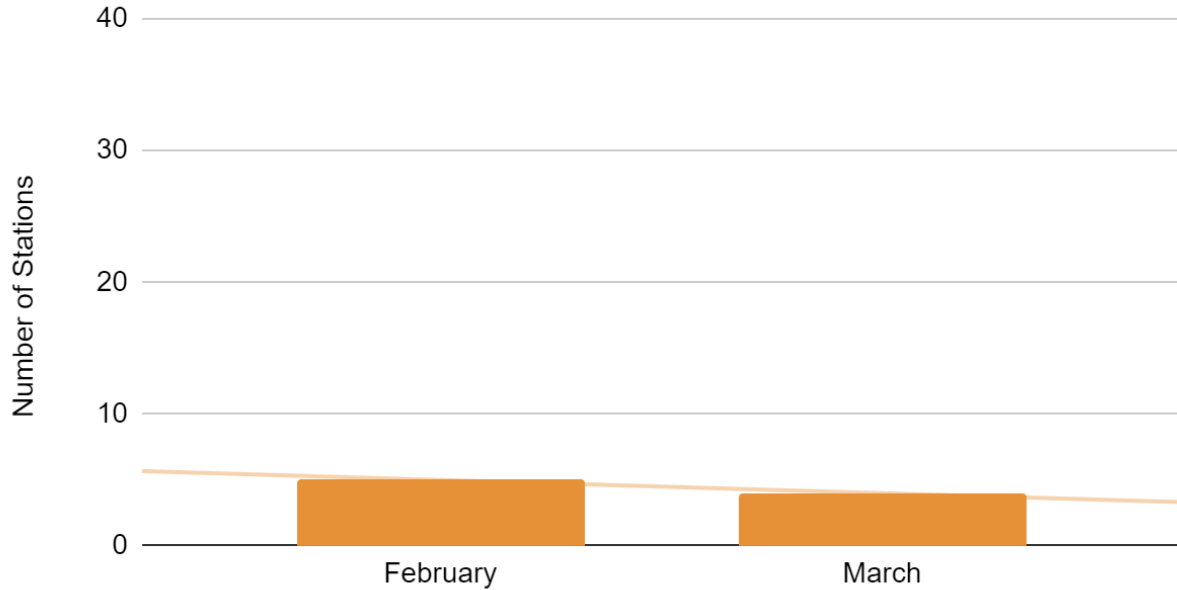
The Water Bottle Station Project (WBSP) started as a small project that has blossomed into a large collaboration on campus. Establishing semester meetings with Thomas Lanzilotta, the Campus Sustainability Energy Manager, and my mentor informs me on how I can assist with fixing more stations and how we can transform my data. This semester I was able to edit my survey to add additional stations, create data tables in spreadsheets, and alter how I submit station errors and information to maintenance. By next semester, I hope to learn how to input station errors on my own in the Fix-It system and determine how to maximize my data results. By continuing this research in the future, I hope that I will be able to advocate for more Elkay Stations and discover how to collect and analyze data more efficiently.

Graph Results (Report - Spring 2020)

NOTE: April 2020 and May 2020 collections cancelled due to COVID-19. Illustrated data was impacted.

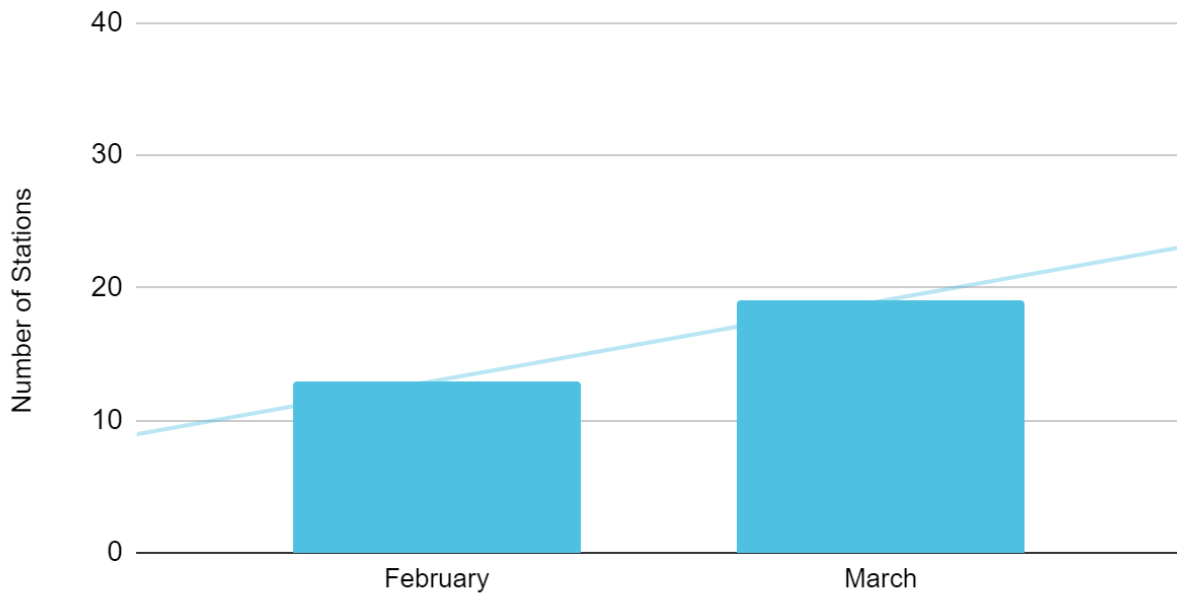
Filter Status (Yellow or Red) for Spring 2020

Laura Osa. Water Bottle Station Project. Spring 2020.



Broken Green Ticker Spring 2020

Laura Osa. Water Bottle Station Project. Spring 2020.



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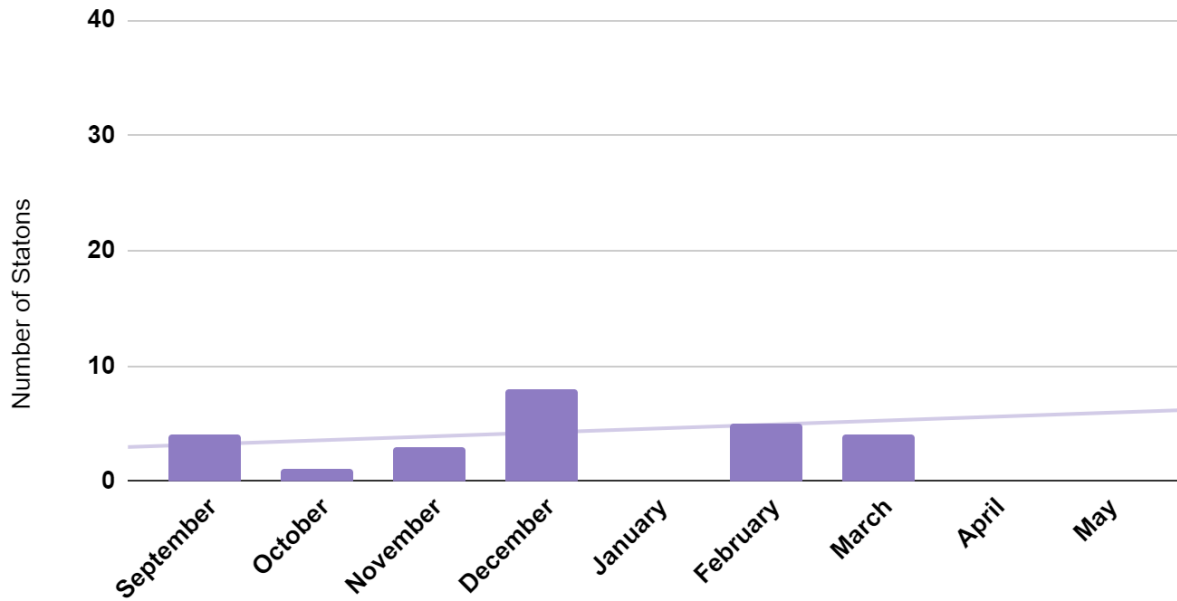
Laura Osa. Water Bottle Station Project. Spring 2020.



Graph Results (Report Fall 2019 to Spring 2020)

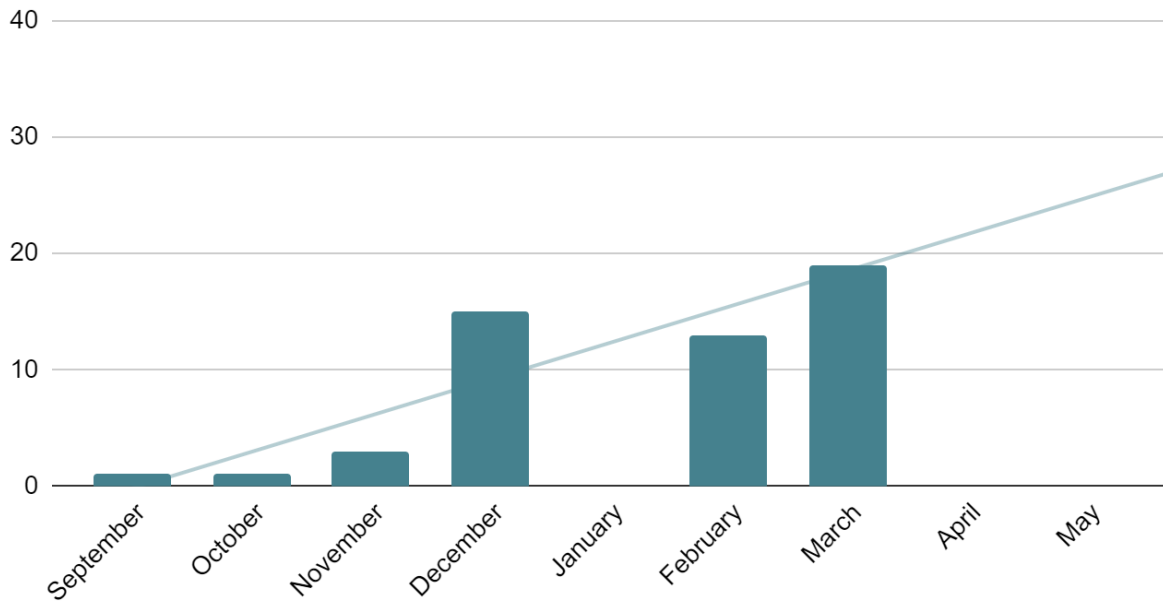
Filter Status Over Time (Y or R) for Fall 19 to Spring 20

Laura Osa. Water Bottle Station Project. Spring 2020.



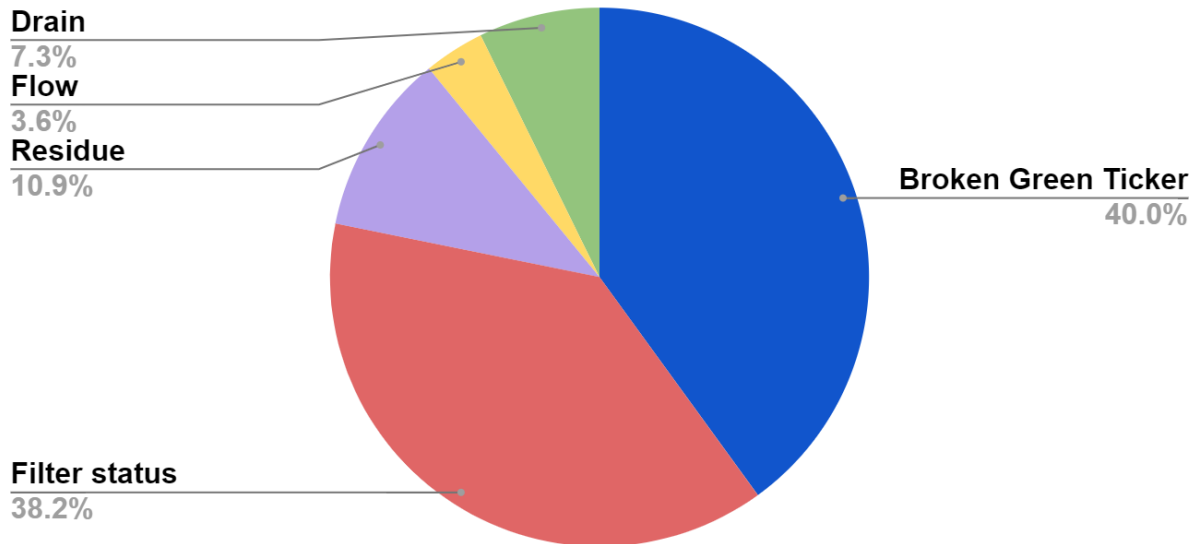
Broken Green Ticker over time (Fall'19 to Spring '20)

Laura Osa. Water Bottle Station Project. Spring 2020.



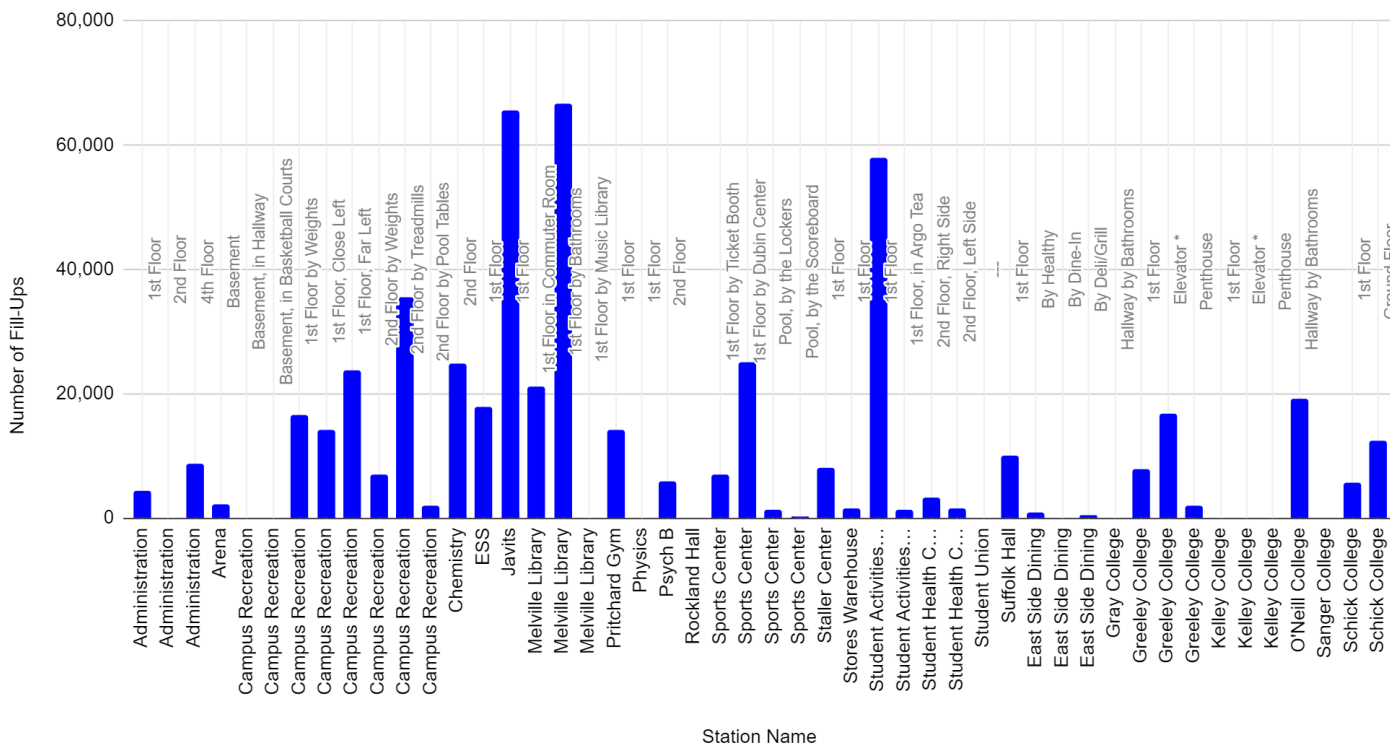
Amount of Stations with Issue (F'19-Sp'20)

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Total Station Fill-Ups from September '19 to March '20

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*Stations with NO numerical information had broken green tickers. Some stations' numerical count may be underrepresented due to broken green ticker interruption and the COVID-19 crisis during the semester.