Franklin Pierce Rindge
Campus Water Study

Brent Steinberg
Elizabeth Renda
Matt Poissant
Ryan Paiva
Jen Blais
Introduction

• Founded by Frank S. DiPietro in 1962, Franklin Pierce of New Hampshire is a four-year, liberal arts university located in Rindge, New Hampshire.

• The main campus which is situated on more than 1,200 acres of woodland, fields, and waterfront, currently enrolls approximately 1,500 students with the majority of them living on campus.

• Students who attend Franklin Pierce University have tolerated unsafe drinking water for too long. It is necessary and encouraged that students purchase drinking water bottles, five-gallon water dispensers, or filters to provide safe, clean, and tasteful drinking water.
Introduction

• The purpose of this research is to find out the most environmentally friendly and economical way to supply quality drinking water to the students and faculty of the Franklin Pierce community.

• It has been proven that the amount of water bottles thrown away each year creates extremely large amounts of waste.

• Therefore, the research team wants to find the best alternative to providing quality drinking water on campus so Franklin Pierce University can do its part with the ever important green movement.
Problem Statement

Research is necessary to determine the most environmental and economical strategy to distribute quality drinking water to the Rindge Franklin Pierce community.
Research Objectives

• Determine the amount of waste produced from water bottles on campus.

• Determine the amount of financial resources used from water bottles on campus.

• Determine the most economical drinking water alternative for Franklin Pierce students.

• Determine what drinking water, either bottled or filtrated, is preferred.

• Determine how students would like to have an alternative water source distributed.
Literature Review

• Americans used 50 billion plastic water bottles in 2006 with only 23% of them being recycled. (1)
• It takes 24 million gallons of oil to produce 1 billion water bottles. (1)
• Filtered water requires no more energy than is already used to propel water through a plumbing system. (2)
• Water filters remove more contaminants than any other purification method, also they can selectively retain healthy trace minerals. (3)
• 25% of bottled water is in fact tap water. (4)
Methodology

Definition of Population

- The population of Franklin Pierce University, Rindge campus consists of approximately 1,700 faculty, staff, and students.
- The researchers chose this as the population because the research is to determine what the Franklin Pierce community prefers for convenient, quality drinking water.

Sample Size

- The research team determined the sample size by realizing the need to survey all segments of the Rindge campus.
- The sample size consisted of members at the Rindge campus, 80 males and 70 females.
- The research team also divided the sample by status at the university into 30 students from each class (Freshman, Sophomore, Junior, Senior) and 30 faculty and staff.
Methodology

• The research team used the non-probability convenience sampling method when handing out surveys. The researchers handed out the questionnaires to students, faculty, and staff in the offices and dormitories.

• The researchers also used a quota sampling method based on gender and class standing to get an equal response from each class, as well as both genders.

• For the team collection method, each group member surveyed a segment of the population. Each researcher targeted 15 males and 15 females from each of their respective segments.
Assumptions and Limitations

Assumptions

• As the surveys were distributed the assumptions were that everyone answered these surveys truthfully, and accurately.

Limitations

• The researchers found that time and the relatively small sample size to be limitations to the research process.
Survey Question # 1

Do you use plastic water bottles?

Responses

- Yes: 86.67%
- No: 13.33%
Survey Question # 3

If you don’t recycle how many bottles do you estimate you throw away a month?

- Mean: 20
- Range: 100
- 34% of people surveyed throw away 30 or more bottles a month.
Survey Question # 4

Do you drink unfiltered tap water here on campus?

![Response Chart]

- Yes: 83.3%
- No: 16.7%
Survey Question #5

How much do you estimate you spend on bottled water a month?
Survey Question #6

What do you perceive as being the most economical alternative for drinking tap water?
Survey Question #7

What type of water do you prefer to drink?

- Bottled water: 38%
- Water Filtration: 31%
- 5 gallon cooler: 18%
- Water fountain: 8%
- Other: 5%
Survey Question #8

What would be the most convenient way to get quality drinking water on campus?

- Water filtration: 49%
- Bottled water: 17%
- 5 gallon water cooler: 22%
- Water fountain: 10%
- Other: 2%
Survey Question #9

What type of quality drinking water does the university currently provide where you live or work?

- Water fountain: 27%
- Bottled water: 9%
- 5 gallon water cooler: 21%
- Water filtration: 11%
- Other: 32%
Survey Question #10

Would you be willing to pay extra money for quality drinking water at the University?

Response

- Yes: 42.7%
- No: 56.7%
Survey Question #11

If yes, how much would you be willing to pay per semester?

- The average respondent was willing to pay $26.00 for quality drinking water.
Cross Tabulations

• **What is your status and do you recycle?**
  – Freshman: 8 out of 30 responded yes
  – Sophomores: 16 out of 30 responded yes
  – Juniors: 18 out of 30 responded yes
  – Seniors: 9 out of 30 responded yes
  – Staff: 11 out of 15 responded yes
  – Faculty: 11 out of 15 responded yes
Cross Tabulations

• What is your gender and would you be willing to pay extra money for quality drinking water?
  
  • Female: 37 out of 70 responded yes
  
  • Male: 27 out of 80 responded yes
Discussion

• As discovered in our literature review, FPU students, similarly to the general public, discard a significant amount of water bottles as trash.

• The literature suggests that other universities supply reusable water bottles and water bottle refill stations.

• As found in our study, our respondents felt that filtration was the most economical and environmentally friendly way to supply water, which was proven to be true by our literature review.
Recommendations

• We recommend that the school use an improved central filtration system for the entire campus, or use individual filters for each residence and other campus buildings.

• We also feel that the school should implement a temporary solution to the present water problem, by offering five gallon water coolers in residences and offices or by providing reusable bottles with water fountain refill stations.

• Use one of the natural springs on the school’s property to supply clean water.

• We also recommend that the school should provide more recycling stations.
Conclusion

• The water in the southwestern part of New Hampshire has a high fluoride and iron content, tainting the color of the water as well as the taste.

• According to our results, the majority of students do not drink FPU’s tap water. This results in the typical student throwing away (not recycling) an average of 20 water bottles a month.
Conclusion

• The data that we have collected proves that there is a problem with the water quality.

• 53% of the FPU community believes that water filtration is the most economical alternative to the current tap water.

• Out of 110 people who throw bottles away, 34 people throw away 30 or more bottles a month; creating a large amount of waste.
References


