

Strategies for the Implementation of a Lifeguard Program to Mitigate Drowning Rates at Puerto Rican Beaches



Sponsored by the Puerto Rico Sea Grant

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Abstract

Every twelve days there is a drowning in Puerto Rico. Our project's aim was to increase water safety and lower the drowning rate by developing a plan for implementing a lifeguard program in the Condado neighborhood, which is home to the most popular and dangerous beaches on the island. With the help of our sponsor, we evaluated funding options to support a lifeguard program. We believe that the results portrayed the importance and feasibility of advancing this program.

Keywords: Lifeguard, Puerto Rico, Drownings, Funding, Condado, and Beaches

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Executive Summary

Project Video



<https://www.youtube.com/watch?v=BYf771PqSIA>

Introduction

Puerto Rico is home to beautiful beaches and resorts. It is a dream vacation for many tourists and it is not an uncommon sight to see the tourists and residents relaxing on the sandy beaches and venturing into the ocean. However, many of these beachgoers do not realize they are putting themselves at risk as soon as they step into the water. There is one open-water drowning every twelve days in Puerto Rico (Sea Grant College Program, 2015). These drownings are associated with the rough surf, rip currents, and jagged rocks that are very prominent on many of Puerto Rico's beaches.

The Puerto Rico Sea Grant created an Aquatic Safety Program to promote the advancement of the island through prevention, education, and conservation of coastal areas. A number of studies and methods have been tested to reduce the incidents and there have yet to be any to prevail; however, one option has yet to be tested. Sea Grant is working on implementing a lifeguard program on the high-risk beaches throughout the island. This program aims to increase water safety as well as to increase education on water conditions.

Methodology

The goal of our project was to increase water safety and reduce the drowning rate on the island of Puerto Rico by finding a source of funding for a lifeguard program that will protect and educate the beachgoers. Due to the financial crisis in Puerto Rico, the government is unable to financially support this program. Ruperto Chaparro, the director of Puerto Rico Sea Grant, expressed the organization's interest in using tourists to bring in the needed revenue. A small fee on hotel guests could be used to fund this lifeguard program both initially and annually. Upon arriving in San Juan, our group looked to retrieve specific knowledge on possible funding structures and the social implications this program will have on the Puerto Rican community, especially in the Condado neighborhood. Using surveys and interviews, we gathered data from travelers, hotel management, lifeguards, and government organizations. Our objectives were to:

- Determine whether the support of the government, companies, and community of Puerto Rico would help to advance this program.
- Evaluate the status of existing lifeguard programs in Puerto Rico to educate ourselves on how to establish a successful program,
- Assess the public's knowledge on water conditions, such as rip currents, high surf, and their overall swimming capability to strengthen our argument on the necessity of our project, and
- Analyze funding structures to determine the most effective way of incorporating a beach safety fee.

After compiling the data from our surveys and interviews, we analyzed the funding options to form our recommendations.

Results and Analysis

Through thorough evaluation of our surveys and interviews, the support of the government, companies, and community of Puerto Rico to advance this program were determined. Results showed that 72.3% of the respondents selected that lifeguards are extremely important. Given that most of these beaches are not watched over by certified lifeguards, 59.4% of these respondents noted that there were no lifeguards and that there should be more on duty, while 17.8% were unsure if there were lifeguards present. From Condado Beach, about 86% of these respondents listed lifeguards as extremely important. We expected that residents would be indifferent towards the amount of lifeguards on the beach because this is what they are accustomed to. We were surprised that both parties feel strongly that there should be lifeguards at these beaches, especially at Condado Beach. The support of both tourists and residents allows us to further our project's production.

As we presented our project to government organizations, they were able to guide us to where we could further take our project or as to which other organizations would be beneficial to contact. We believed that the Tourism Company held a lot of authority and that with their support, we would be able to enforce the lifeguard program. However, they could not provide any financial support but would try their best through other resources to help our efforts. Given that hotels are invested in their guests' safety, we thought that the International Hospitality Enterprise (iHE) would be welcoming to our proposal. The iHE agreed to partner with our group and assess our different proposals if we get the credibility. Since the PRHTA holds the collective say for all the Puerto Rican hotels, inns, and bed and breakfasts, we consulted with them (E. Diaz, personal communication, November 24, 2015). We found out that with their support we would be able to suggest our proposal to the hotels. We identified that having these organizations

as well as other government organizations in agreement would allow us to recommend plausible and successful solutions.

In order to understand the complexities behind establishing a successful lifeguard program, our team conducted a number of interviews with lifeguards from Seven Seas, Luquillo, and Escambrón Beaches. The most significant difference we encountered between these three beaches is the level of respect the beachgoers show the lifeguards. Luquillo lifeguards felt that 90% of the beachgoers adhere to the rules of the beach and respect the lifeguards. At Escambrón Beach, the lifeguards felt the exact opposite and believe the lack of respect from the beachgoers contributes towards the numerous minor accidents on the beach. Seven Seas and Luquillo were well kept, up to date, and had little to no problems with public adherence to the beach rules. We theorized that a neglected beach, minimal equipment, and negative working conditions of the lifeguards leads to the disrespect from the beachgoers. These survey and interview results provided the Puerto Rico Sea Grant with the necessary data to continue with the implementation of this lifeguarding program.

On the subject of aquatic ability and knowledge, our results showed that the overall adequacy of a beachgoer's swimming ability and beach safety education is below the needed level in order to remain safe on these dangerous San Juan beaches. We were surprised that the visitors and residents were not more prepared for the coastal terrain of the island. With uneducated and unprotected beachgoers, the amount of drownings will only increase. It is imperative that Puerto Rico focuses on preventive measures such as water education and placing lifeguards on dangerous beaches such as Condado Beach.

In the last unit of survey questions, respondents were asked to consider how much they would be willing to pay per night on a hotel fee and which fund collection means they would be

most likely to utilize. Close to 60% of respondents selected a hotel fee as their preferred collection method. With 99% confidence, beachgoers are willing to pay between \$3.31 and \$4.15 per night. The mean was \$3.73 while both the median and mode of the responses were that the individual would be willing to pay \$5 or more. When we were creating the surveying question, we thought that the \$4 or \$5+ fee would not be a favorable choice, but it ended up being the most frequently selected response. We found this to be very affirmative for the progression of placing lifeguards on this beach because we would have more than enough funds if we were to charge a smaller amount.

The majority of our research questions focused on each organization's personal feedback on a hotel fee and any additional comments or ideas on funding. Most of the organizations wanted us to shy away from the hotel fee even though beachgoers were willing to pay more than what we would need to fund such a program. However, we received some valuable information and alternative ideas for funding. Ernesto Diaz from the Department of Natural and Environmental Resources advised us to steer clear of the taxation and instead, to consider adding a voluntary contribution to the hotel agreement form. Roberto Varela from the Puerto Rico Hotel and Tourism Association suggested looking into the chance games funds, which refers to the taxes collected from casinos, and amending the corresponding laws to fund the lifeguard program. We also discovered that in the short term, a plausible funding source would be from the hotel's general revenue. These option gave us alternative methods to gain funds if the hotel fee is later deemed impossible.

Conclusions

- Residents, tourists, hotels, and organizations are in support of this lifeguard program. Everyone identifies that these beaches are dangerous and in need of lifeguards.

- In order to have a successful program, lifeguards need to be respected by the beachgoers and the government. They should be given the proper equipment, uniforms, trainings, and certifications to properly do their job.
- Beachgoers' swimming ability and beach safety education is below the needed level in order to remain safe on these dangerous beaches. This emphasizes the need for lifeguards to be placed on Condado Beach.
- Beachgoers are willing to pay a hotel fee that would completely cover the lifeguard program. Hotels and organizations are against this idea, but suggested other options such as unused government collected money, a voluntary fee, or private funds.

Recommendations

Short Term

- We recommend that hotels implement a donation option on their guests' hotel charge to supplement the funds they provide to the lifeguard program.
- We recommend the use of an aquatic safety handout to educate the public on Puerto Rican water conditions.

Long Term

- We recommend that the chance games funds going to the Department of Treasury are looked into more thoroughly for a possible reallocation.
- We recommend that our survey data is presented to the hotels and to government officials to persuade them to enforce a hotel fee to fund the lifeguard program.
- We recommend that the lifeguard program's budget covers the entire cost of the lifeguards' and beach's equipment.

Future Research

- We recommend another project to create an educational airline video to inform passengers on coastal attractions and hazards, along with donation opportunities.

Chapter 1 : Introduction

As colder weather moves through mainland United States during the winter months, many choose to book vacations to warmer states, tropical islands, and pleasant climates. Vacationing brings joy, relaxation, and fun. However, safety is often neglected and can lead to unfortunate situations. When in unfamiliar territory or culture, precautions should always be taken. One should also be aware of the unpredictable water conditions when traveling to tropical islands.

Puerto Rico is home to beautiful beaches and resorts. It is a dream vacation for many tourists and it is not an uncommon sight to see the tourists and residents relaxing on the beautiful sandy beaches and venturing into the ocean. However, many of these beachgoers do not realize they are putting themselves at risk as soon as they step into the water. There is one open-water drowning every twelve days in Puerto Rico (Sea Grant College Program, 2015). These drownings are associated with the rough surf, rip currents, and jagged rocks that are very prominent on many of Puerto Rico's beaches.

The Puerto Rico Sea Grant created an Aquatic Safety Program to promote the advancement of the island through prevention, education, and conservation of coastal areas. A number of studies and methods have been tested to reduce the incidents and there have yet to be any to prevail; however, one option has yet to be tested. Sea Grant is currently in the works of implementing a lifeguard program on the high-risk beaches throughout the island. This project has an aim to increase water safety as well as to increase education on water conditions on the island. We were tasked with formulating an appropriate funding source to support this lifeguard program. Due to current financial circumstances, any monetary help from the government of

Puerto Rico is impossible and we were tasked with finding an outside source of revenue to advance this project.

Despite the economic standing of Puerto Rico, tourism on the island still flourishes. With tourism and a striving hotel industry, our team utilized Sea Grant's proposal, in which the source of funding for the lifeguard program would come from hotels. Through calculations made by Ruperto Chaparro, Puerto Rico Sea Grant Director, an imposed one dollar hotel fee per night would cover the initial and annual cost of a pilot lifeguard program on the Condado Beach in San Juan (R. Chaparro, personal communication, October 28, 2015).

The goal of our project was to increase water safety and reduce the drowning rate on the island of Puerto Rico by finding a source of funding for a pilot lifeguard program that will protect the beachgoers. This program also aims to educate the beachgoers through better signage and awareness. We first began by evaluating the public's knowledge on water conditions, such as rip currents, high surf, and their overall swimming capability. We continued on to assess the status of the lifeguard programs that currently existed in Puerto Rico. Combining these two factors we were able to provide our sponsor with appropriate recommendations for future employment of lifeguards as well as some information for educational opportunities in the area.

We then identified the exact hotels that we would be testing our pilot project with. We determined the willingness of government organizations, local companies, and the community of Puerto Rico to support this lifeguard program. We also analyzed funding structures to determine the most effective way of incorporating a beach safety fee while considering the positive social effects. This would boost tourism for Puerto Rico, employment will benefit from the creation of jobs for the community, and the overall safety on the beach will improve. Our group provided

recommendations on the form of payment and the amount that the Sea Grant would be able to implement based off of the feedback given in the beach surveys and interviews.

Chapter 2 : Background

In this chapter, we delve into the current state of the aquatic safety in Puerto Rico. First, we present information on the tourist environment and the aquatic dangers in Puerto Rico give the reader some perspective on the project's foundation. Secondly, we explore the lack of safety at beaches more thoroughly and issues with liability are considered. Next, we look into the most realistic system more carefully and funding options are proposed. Finally, this chapter concludes with social impacts on the people who reside in Puerto Rico.

2.1 Water Safety

Puerto Rico is a United States Commonwealth Island located in the Caribbean surrounded by a number of smaller islands. San Juan, the capital and the most populated city in Puerto Rico, is known for their beaches and resorts. Condado, Ocean Park, and the Isla Verde are some of the many beach locations tourists flock to because of their attractiveness.

Condado has been a popular spot for beachgoers and travelers since the early 1920s. Although these beaches are very enjoyable, swimmers need to be cautious of the rough surf since there are no lifeguards on duty. The beaches that stretch behind the San Juan Marriott and the Atlantic Beach Hotel are very eye pleasing, but have some of the most dangerous bodies of water that borders the coast (Beaches, 2015).

2.1.1 Drownings

Drownings can occur due to environmental and social factors. The rocks and rip currents at the beaches are environmental elements that are out of a swimmer's control. A swimmer may find himself or herself in such a situation purely by accident and may drown. However, Williamson and colleagues (2013) explain that swimmers putting themselves at risk of injury or

death by ignoring warnings, not knowing how to swim, or using a beach with an absence of a lifeguard are all considered social factors of drowning occurrences. The authors feel that some of the main reasons for the drownings at these beaches are environmental. They found that the five high-risk beaches to be aware of due to the amount of drownings that occur there are the Marriott Condado, Mar Chiquita, Balneario La Monserrate en Luquillo, Vacía Talega, and Jobos. See Figure 2.1 for a map of some of these beaches.



Figure 2.1: Map of Puerto Rico (Destination 360, 2010)

News articles from the past few years report on the high number of heart wrenching stories of drowning incidents at Puerto Rican beaches. A news article written in March of 2015 tells about a retired NYPD officer, Jose Rosario, who drowned at the age of forty-seven during his vacation in Puerto Rico. The retired police officer saved a twelve year-old boy from drowning, but then found himself struggling to battle the strong currents from the surf. His daughter posted online: ‘My dad did everything he could and helped my brother’s friend get out

of the ocean but he couldn't get out himself' (Farberov, 2015). Rosario was a victim of the environmental hazards and could not overpower the ocean's hold on him, despite knowing how to swim.

In two more specific drowning cases, both victims were experienced swimmers. The first victim suffered and died in the hospital from complications after being found unconscious in the water and the second dove into a "rough and dangerous" surf that pushed him into a rock jetty and was found dead further down the beach (Griffiths, 2015). These victims ignored the signs of danger at these beaches and there was no lifeguard to be at their rescue. There is an example of these signs in Figure 2.2.



Figure 2.2: Hazard Sign on Condado Beach

Going along with Williamson and colleagues theory, these cases were caused by both environmental and social issues.

Approximately thirty people die at unstaffed Puerto Rican beaches each year from drowning incidents (Puerto Rico Sea Grant College Program, 2015). Surprisingly, 80% of the drowning victims in Puerto Rico are locals as opposed to foreign travelers (Brewster et al., 2008). The Puerto Rico beaches cause drownings because of their strong rip currents and

undertow. Ideally, lifeguards would diminish the amount of drowning incidents due to both environmental and social hazards.

2.1.2 Established Research on Beach Safety in Puerto Rico

A previous project, sponsored by Sea Grant, was done back in the 1980s by students of Texas A&M focusing on establishing guidelines for beaches all over the world. The project specifies required qualifications for lifeguards, such as being physically fit, passing qualification tests, and going through a preseason training process (McCloy and Dodson, 1980). The study also touches upon how lifeguard roles vary by country and cultural influence. These studies can be used by the Puerto Rico Sea Grant to maximize the efficiency of the lifeguards in their proposed program.

There have been a few case studies done back in the early 90s on different coastal areas in the United States that displayed the effectiveness of a lifeguard program. A study done on Keawaula Beach in Hawaii, which had similar beach conditions to Condado Beach, lacked the resources of lifeguards to protect their beachgoers. The study states that:

“The combination of dangerous physical features and heavy use by patrons increases the risk for water-related injury and death. From 1985 to 1991, two drownings and 40 near-drownings occurred at Keawaula Beach. Although the State of Hawaii does not provide lifeguards, it elected to contract with the City and County of Honolulu to place lifeguards at Keawaula Beach beginning in January, 1992. Since then, no drownings have occurred at this beach” (Branche, 2001).

This is a key example of how much a lifeguard can change the safety of a beach and gives validity towards our efforts in implementing a successful program in the Condado neighborhood.

An Interactive Qualifying Project (IQP), completed by WPI students in research of the beaches and surveying beachgoers, the group concluded that the public needed education on the risks and hazards of the open-water. The surveys conducted also prove that the signage and warnings could be redesigned and relocated to catch the beachgoer's attention more effectively. This project is beneficial to our work because we were able to use their research on how signs are ineffective to strengthen our project's purpose.

2.1.3 Blue Flag Program

It is a law in Puerto Rico (Law 63), that the perfect management program for a beach is the Blue Flag program. The Blue Flag Program is a European program that has been expanded to some Caribbean islands. It is a certification process in which beaches must meet a set list of requirements, such as water safety and quality, lifeguards, and proper equipment and facilities. The full list of requirements and other guidelines can be found on their website (<http://www.blueflag.org/>). The first Puerto Rican Blue Flag program was tested as a pilot run on Escambrón Beach in 2004 and was funded by the Puerto Rican Tourism Company.

To become a Blue Flag beach, either beach management will reach out to the program or Maria Elena Garcia from Organización Pro Ambiente Sostenible (OPAS) will reach out to the beach. These beaches are then assessed to see if they meet the needed qualities beginning with a risk assessment and water quality examinations. If these requirements are met then the program will be certified. The Blue Flag program does not provide funding to these beaches, they are only there for supervision (M. Garcia, personal communication, November 3, 2015).

All beaches under this program must adhere to the rules set; otherwise, they run the risk of losing their flag. Beaches need to be staffed with the appropriate amount of lifeguards for their respective size. These lifeguards are not hired directly by the Blue Flag but by the management

of the beach. The municipality hires the lifeguards at Escambrón and the lifeguards at Luquillo are employed by the Sports and Recreation Department. The Blue Flag monitors the certifications of these lifeguards. These beaches are also responsible for providing their own appropriate equipment. Berliz Morales, from the Sea Grant, is working to create an equipment checklist for Garcia to help her better assess Blue Flag beaches. Garcia admitted that a beach in the past had failed to meet the requirements and had a drowning occur due to it. Failure to meet any of the required checklist items can result in the beach losing their Blue Flag certification and be subject to poor publicity (M. Garcia, personal communication, November 3, 2015).

Despite the warnings by beach management and on the posted signs at these Blue Flag beaches, many people continue to disregard the rules and signs. If an accident were to occur, the organization in charge of the beach takes the liability. The Blue Flag Program is not responsible for the liability at these beaches; they just ensure that the beaches are well kept and safe for all beachgoers (M. Garcia, personal communication, November 3, 2015).

2.1.4 Lifeguards and Other Safety Measures

2.1.4.1 Significance

A lifeguard's main task while on duty is to ensure the safety of swimmers. According to American Lifeguard Magazine, "This dedicated group of professionals put their athletic skills to the test every day with daily training regimens and through various competitions that sharpen their lifesaving skills" (page 7). The importance of lifeguard supervision is the ability of lifeguards to understand how people drown. Lifeguards are trained to foresee the signs of a drowning before death occurs. It is a widely held misconception that flailing limbs and distressed actions are signs of drowning. In fact, most drowning incidents are quiet and quick (Branche & Stewart, 2001). The United States Lifeguard Association (USLA) reported 91,724 rescues and

about 7.8 million preventative actions in 2014. From reported beaches, the USLA disclosed 95 drowning deaths at unguarded beaches and 19 drowning deaths at guarded beaches in 2014. The USLA believes that there is 1 in 18 million chance that a person will drown at a beach guarded by USLA certified lifeguards (United States Lifesaving Association, 2014).

Lifeguards provide a sense of safety not only for beachgoers, but also for beach management. Lifeguards are employed to monitor the beaches for any dangers that may arise in the water such as sharks, jellyfish, high surf, and dangerous rip currents. Lifeguards are the enforcers of the rules on the beach and ultimately make the call on the safety of the water.

2.1.4.2 Training Needs

What sets individual lifeguard programs apart from one another is their training and how they are employed. The United States relies on lifeguard certification programs such as the American Red Cross, American Lifeguard Association, the City of Los Angeles, the YMCA, and Boy Scouts of America to ensure proper and consistent training for all of their lifeguards (Lifeguarding Around the World- The Rescue Tube). The American Red Cross' lifeguard training program teaches Lifeguard Training (including First Aid), CPR for the Professional Rescuer, Lifeguard Management, AED Essentials, Oxygen Administration for the Professional Rescuer, Preventing Disease Transmission, Community Water Safety, and Basic Water Rescue (American Red Cross, 2015). Puerto Rican lifeguards are typically trained under the American Red Cross, but do not receive the highest quality of training (Ruperto Chaparro, personal communication, October 28, 2015).

On Puerto Rico beaches, there are a few lifeguards present; however, they are typically staffed on the safer low-risk beaches. Not all of these lifeguards have received adequate lifeguard training, as they do not meet the requirements for the U.S. standard of lifeguards (Ruperto

Chaparro, personal communication, October 28, 2015). It is undetermined if these lifeguards are able to adequately take on the responsibilities of the beaches. Additionally, the lifeguard equipment, if available, may not be sufficient. Beaches that require lifeguard assistance should be identified and the facilities supplied to them would have to be appropriate (Brewster, McManus, McCrady V, & Serrano, 2008).

2.1.5 Open-Water Danger Awareness

Beach officials cannot only rely on lifeguards, but also on signage around the beach to relay the message to the beachgoers that the water is unsafe to swim in. Many of the beaches in the Condado neighborhood are depending solely on postings on the beach to warn tourists and everyday beachgoers of the dangerous waters. Signage can also warn beachgoers of dangerous currents, wildlife, rocks, and other potential hazards. However, they are not necessarily effective. Rip currents, fast-moving narrow channels of water that move perpendicular to the shore, are one of the greatest dangers at these beaches because of how quickly they can bring a swimmer into deep water and the lack of knowledge on how to escape this hazard. Interviews held at four beaches in the Australian State of Victoria tested the effectiveness of the sign in a few different ways. Currents were the most prominent hazard in the minds of the respondents despite what the current signage might suggest. About 45% of these respondents reported recognizing any postings (Matthews, Andronaco, & Adams, 2014). This proves that signs are not being read and not promoting a safer environment.

Lack of and misunderstanding of signage is a problem that affects some of the beaches in Puerto Rico as well. In the past IQP team's project on the effectiveness of signage on high-risk and low risk beaches, the team concluded that many of the signs were either not seen or were not given enough attention. In the "Evaluating Effectiveness of the Signage and Other Markings for

Guidance and Warning Placed by OCN” it states, “Signage at the beach is generally missed according to the 54% of interviewees stating they did not see the signs (51% of beachgoers at dangerous beaches)” (Williamson et al., 2013). Although this research and evidence was produced in 2013, the drowning rate still appears to be an issue for the high-risk beaches in the neighborhood. The government and beach officials in the Condado neighborhood must come to realize that these high-risk beaches are in need of lifeguards and beach attendants who will not only ensure these signs are posted, but will also see that they are correctly followed.

2.2 Liability

Liability was once the problem hindering the implementation of the lifeguard program; however, Sea Grant has teamed up with the State Agency for Disaster and Emergency Management (AEMED) on the matter. This governmental organization is willing to take upon all the liability issues that might come with the implementation of the lifeguard program in the Condado neighborhood in order to make this program a reality. Although liability is still a prominent issue across Puerto Rico, it is not the main focus of our project.

One of the major obstacles a lifeguard program faces in protecting the beaches of the Condado neighborhood is the case of liability. Brewster and colleagues (2008) state that the government has put a cap of \$75,000 on the amount that a plaintiff is allowed to sue an entity for problems. The authors note that even though liability is only pertinent to businesses located directly in front of the beaches, it would be beneficial if there were no chance of a lawsuit at all. It was also found that many hotel managers believe that having lifeguards on the beaches in front of their hotels increases the chance of being liable for drownings and injuries when caught in rip currents, but that has been proven false. For beach landowners, the part of the ocean in which they are liable for is only from the shore to the high-tide line. According to Brewster and

colleagues, beach landowners are not liable for the other beaches adjacent to the particular beach. Anywhere past the high-tide line going outwards towards the ocean is governed by the state. Therefore, in the case of someone drowning or getting injured, Brewster and colleagues say the hotel owners would not be liable, but instead the government would take liability.

Josh Clemons (2008) tells that there are different types of liability, with the two most well-known being “tort of negligence” and “duty to warn.” A plaintiff can bring up a court case against a beachfront owner for *tort of negligence* if the beachfront owner owed a duty of care to the plaintiff, and the breach of that duty of care resulted in the plaintiff suffering an injury.

Clemons goes on to explain what exactly constitutes a duty of care:

“Generally speaking, a landowner has a duty to non-trespassers on her land to either warn them of dangerous conditions on her land, or to make those conditions safe.

However, a landowner generally does not have a duty to warn people on her land about dangerous conditions on adjacent property. The underlying common-sense principle is that she cannot be held liable for dangerous conditions on another’s land because she did not create the conditions and has no control over them” (Clemons, 2008).

The second is the *duty to warn*. This is brought about when the beachfront owner advertises the beach to the plaintiff, but as a result of not warning the plaintiff about the dangers in the beach, they suffer an injury. In both of these cases, the plaintiff has the right to sue the defendant because the defendant would be entirely liable for the plaintiff (Clemons, 2008).

A news article about a lawsuit following a drowning incident in Puerto Rico states, “The failure to supervise with professional lifeguards and the failure to warn effectively were the two major claims made in by the plaintiffs” (Griffiths, 2015). Plaintiffs from the case felt that if a lifeguard was present, death could have been prevented. The defendants argued back that

lifeguards on duty cannot guarantee that every beachgoer will be safe from drowning. Our source provided no outcome of the case other than providing a suggestion to increase updated signage postings.

Lifeguards can be implemented by the government or by the private sector (e.g. hotels). When the government is in charge of the lifeguard program, depending on the helpfulness or inactivity of these lifeguards, they have the authority to take measures that would work towards correcting any issues that might arise in the lifeguard program. This also means that the government would be liable for any incidents that occur on the beach. Lifeguard programs run by the private sector are unaffiliated with the control of the government and, as a result, the corrective measures taken to improve the lifeguard system are less strict and often tend to have a lighter approach while the government is actively trying to ameliorate the issue. This also means that for any incidents that occur on the beach, the private entity would be held accountable and liable. Since the Puerto Rico Sea Grant has given the liability to AEMED this lifeguard program will be governmental affiliated and, therefore, the government is liable.

2.3 Organizations

There are key organizations who would support the implementation of the new lifeguard program. The Puerto Rico Hotel and Tourism Association (PRHTA) is a non-profit organization made up of many diverse hotels, educational facilities, restaurants, and other services to make Puerto Rico “one of the world’s finest tourism destinations” through business and marketing methods (Puerto Rico Hotel & Tourism Association, 2015). This very important to gain support and receive permission from the PRHTA to implement a beach safety fee on hotel guests. Without their consent, a fee would be impossible to apply. Other Puerto Rican organizations that are relevant for the success of our project are the Sports and Recreations Department (DRD), the

International Hospitality Enterprise (iHE), the Puerto Rico Tourism Company (PRTC), Pro Sustainable Environment Organization (OPAS), the Department of Natural and Environmental Resources (DNER), and the City of San Juan Emergency Management Office.

The Puerto Rico Tourism Company provides financial and technical support to the Blue Flag Program. They certify beaches and marinas in compliance with the following criteria: environmental education and information, water quality, environmental management safety and services. Within the island, there are seven beaches and two marinas certified under the Blue Flag Program (C. Morales, personal communication, November 10, 2015). The DRD is responsible for some Blue Flag certified beaches. These beaches have lifeguards because the Tourism Company is able to provide them with funding. The DRD wants to focus less on management and more on the overall water quality, safety, lifeguarding, and environment of these beaches (J. Figueroa, personal communication, November 3, 2015). Both the Tourism Company and the DRD provided us with valuable information about the beaches we were unable to find research on, and put us in contact with other organizations and lifeguards to further the expansion of our project. The Tourism Company also serves as a possible funding source for our lifeguard program.

The International Hospitality Enterprise (ihepr.com) is a locally founded company that is in charge of many hotels, casinos, and other services in Puerto Rico. President of the iHE, Jose Suarez, has been working with the La Concha hotel in Condado to provide their own certified lifeguard for the Condado Beach strip directly behind their hotel. He currently has an undercover lifeguard who watches over their area of the beach. Suarez's company provides our group with experiential information, of which we stemmed our project off, as well as insight on how to find other funding sources since they are going through the same process. Suarez also put us in

contact with a representative from the City of San Juan Emergency Management to obtain more information on disaster management and other planning tactics. This office is in charge of numerous activities including the recovery of bodies from water incidents (O. Gonzalez, personal communication, December 10, 2015).

The Department of Natural and Environmental Resources focuses on public and private uses with coastal environment protection (E. Diaz, personal communication, November 24, 2015). OPAS is similar in that their focus is on environmental education. Both organizations are relevant because of their connection with the environmental aspect of our project. Additionally, the two organizations gave us information and suggestions on safety and conditions at Condado Beach. We used this feedback to be able to better inform beachgoers and other organizations in the future and to strengthen the necessity of our proposal.

2.4 Funding

2.4.1 Options for Funding

The ultimate focus of our project is to create a source of funds while keeping all stakeholders in mind. The government and organizations like State Agency for Disaster and Emergency Management (AEMED) do not have the funds to support a lifeguarding program. This proposed program will cost \$840,879 for its start-up year including wages, training, and other expenses. Afterwards, the program will cost \$613,744 annually for personnel and recurring expenses. The full budget can be found in Appendices I and II.

Currently, Puerto Rico is suffering from a crippling amount of debt. Nathaniel P. Flannery (2015) writes that this territory with a population size comparable to Connecticut owes seventy-two billion dollars, an amount that exceeds the debt of every United States state except for New York and California. Investor and public policy analyst Robert Rosenkranz (2015)

compares the Puerto Rican economy similar to that of Greece and Argentina. In hopes to cut costs, the Puerto Rican government has closed down almost 160 schools in the past two years. Similar to Greece, Puerto Rico cannot devalue its currency because it has to struggle with the currency of a wealthier economic entity: The United States. Puerto Rican politicians believe a massive debt reconstruction would be the only aid to the failing economy and that there is no short-term solution (Flannery, 2015).

Due to Puerto Rico's lack of economic success, implementing a tax to provide for the lifeguard program is unlikely to be favored by the natives of Puerto Rico, but it is still something to consider. The taxes in Puerto Rico are different than those in the United States because Puerto Rico is not a state, but a Commonwealth of the United States. Their taxing system is a mixture of the United States' and something of their own. For instance, Puerto Rico's income tax is a mere four percent and they are excluded from things like dividend tax and capital gain tax (Wood, 2014). A taxing system for funding beach programs has worked in other mainland United States locations. For example, about thirty years ago, the State of Florida authorized a "Tourism Development Tax" that is utilized to provide for lifeguard services (Brewster et al., 2008). However, unlike Puerto Rico, Florida is not in an economic crisis. Therefore, other funding methods that do not tax the residents of Puerto Rico will be best utilized.

Another funding option for the lifeguard program proposed by Ruperto Chaparro, the Director of the Puerto Rico Sea Grant, was to implement a form of hotel fee. Puerto Rico Sea Grant has a project on aquatic safety that "strives towards the development of conscientious and practical strategies that will guarantee human life" (Puerto Rico Sea Grant College Program, 2015). However, the National Oceanic and Atmospheric Administration (NOAA) can only afford to give each chapter of Sea Grant a minimal amount. The benefit of a hotel fee would be

that tourists and business people would fund this program rather than residents because they are likely to utilize the program during their stay. As of 2013, the average Puerto Rican household income is \$19,183, while the average of the United States is \$52,250 (Noss, 2014). Tourists are coming from places other than the United States, but these salaries serve to show the financial situation that Puerto Rico's people are in.

If there were a one dollar per night beach fee to hotel stayers, the lifeguard program would be more than adequately funded. Within the years of 2013-14 the total amount of visitors reached 4,455,201 tourists. The overall amount of expenditures for that same year was \$3,438,085,000 (C. Morales, personal communication, 2015). The full spreadsheet can be found in Appendix XV. On average, tourists or groups of tourists tend to stay 2.6 nights in Puerto Rico (Rivera, 2015). According to The World Bank Group, there is an average of 3.1 million arrivals in Puerto Rico per year (International Tourism, Number of Arrivals, 2014). This amounts to between two and eight million dollars in funds per year, dependent on how many of these arrivals are tourists and the size of families. This amount is a large surplus of the required amount of money, so smaller hotel fees could be proposed. Hotel fees are looked into more depth in the following section.

The last funding options to consider are beach parking fees, entrance fees, and donation boxes. The positive aspect of a parking fee or entrance fee would be that *only* beachgoers would be charged to use the beach. Balneario La Monserrate in Luquillo and Carolina Beach both utilize a parking fee. However, not all beachgoers drive and there may not be a parking option, so this method would raise less money. With donation boxes, contribution would be completely voluntary, but would have a high risk of theft; Therefore making funds less secure.

2.4.2 Hotel Involvement

Due to the current financial crisis and lack of governmental monetary aid in Puerto Rico, Sea Grant has decided to pursue the hotel fee as the most viable option. There are many ways that we hope the hotels in the Condado neighborhood take part in the establishment of a lifeguard program on the high-risk beaches. With tourism being a great source of revenue for the Puerto Rican government, we identified hotels as a vital contributor to tourist revenue. The Puerto Rico Sea Grant hopes to initiate a mandatory beach fee to be imposed on the tourists staying at hotels and resorts. This fee will cover the initial and annual cost of a lifeguard program on the high-risk beaches in the Condado neighborhood without being detrimental to the government.

Despite the advantages of applying a beach fee through the hotels, there are also some potential problems. Hotels in the United States and around the world have charged fees for many years now. These fees encompass room amenities such as parking, telephone usage, wireless Internet, and drinks and snacks taken from room mini-bars. Hotels in popular tourist destinations have also added on some form of city and county or state tourism taxes. This tourism tax typically totals about 20% to 25% of the room rate (Flannery, 2015). Hotels have been receiving complaints for these fees and are being compared to airlines that charge unnecessary costs. According to Christopher Elliott, “The way some resort fees are broken out and disclosed is commonly referred to as ‘drip’ pricing: This means that a company initially advertises only part of a product’s cost, then reveals additional mandatory charges later, as a consumer goes through the buying process” (Elliott, 2012). The sudden increase in room cost has left many travelers in upset. Fees are dependent on location of the hotel and are at the hotel ownership’s discretion. These fees are expected to become not only a national epidemic, but a worldwide occurrence as

well. Although travelers at this point have multiple options for avoiding additional charges by the hotel, all hotels will most likely be using these techniques to boost their revenue eventually.

To implement such a fee, we must consider some relevant federal laws. Referring to the previous article, “The Federal Trade Commission has warned 22 hotel operators that their online reservation sites may violate the law by providing a deceptively low estimate of what consumers can expect to pay for their hotel rooms” (Elliott, 2012). This law relates to the addition of fees post-room reservations. A letter will be sent to offenders with a recommendation to update their websites and to eliminate misinterpretations. After a warning is issued the Federal Trade Commission can chose to take action against any company who fails to meet the standard of information presented to the hotel guest. If fees are not explained and presented upfront, the drip pricing comes into effect.

A common problem stems from the way the information is presented. It is believed by travelers that hotel fees are flat rates during the booking stage. As the price continues to increase, the hotel industry brings in an immense amount of money into their respective companies. The U.S. hotel industry is projected to bring in \$2 billion in ancillary fees this year, quadrupling the \$550 million collected a decade ago (Elliot, 2012). It is understandable why travelers and the government may want to get involved on such an issue. A simple yet effective approach is to automatically include all room fees in the room cost. When adding a beach fee to a hotel charge, it would be a necessity to inform guest immediately.

Fees are no exception to the hotels in San Juan. Resort hotels, such as the Marriott San Juan Resort and Stellaris Casino include fees to their room rates to cover amenities. These fees cover bottled water, a casino coupon, local phone calls, and wireless internet (Pizam, 2015). This additive typically comes as a surprise to the guest because it is not automatically included in the

price of the room, but is charged to the account following the reserving of the room. Puerto Rican hotels tax 9%, while resorts tax 11% (S. Ortiz, personal communication, October 28, 2015). This is a concern to our project because hotel fees are a route that the Puerto Rico Sea Grant has highly considered. The reactions of both hotel ownership as well as travelers must be considered when recommendations are made.

2.5 Social Implications

The lifeguard program would have many positive impacts on Puerto Rico socially and economically. This project's main purpose is driven by its social implications.

2.5.1 Tourism Boost

Tourism in a country can sometimes make or break their economic and societal status. The World Travel and Tourism Council estimated that by the end of 2015, Puerto Rico will see about 3.41 million tourists travel through the island, including people that just stay the day as well as overnight. Two of the main, most successful hotels in the Condado area, La Concha Resort and the Vanderbilt, see an annual average of 400,000 guests. These calculations can be seen in the interview in Appendix XVIII (J. Suarez, personal communication, November 11, 2015). The total revenue generated in 2014 from individual businesses and companies by non-residents was \$7.0065 billion. This total includes money spent on transportation, cultural, and recreational activities, vacation costs, and business expenses within Puerto Rico (Turner, 2015). It would be beneficial to our project to tap into the striving tourism economy in Puerto Rico as a source of funding.

With the creation of a lifeguard program in the Condado neighborhood, safety would increase with more rescues and less drownings, which in turn would build positive reputations for the beaches. If Condado Beach grew in popularity, one can assume there would be more

tourism activity, which would provide more revenue to the people of Puerto Rico. Tourism plays a significant role in Puerto Rico's current state of economy.

2.5.2 Employment of Lifeguards

The first component in starting this program would be to hire lifeguards to start their training. Generating jobs for the residents of Puerto Rico would help to decrease unemployment. The United States, excluding Puerto Rico, has an unemployment rate of 5.1 with an individual state low of 2.8 and a high of 7.6. Puerto Rico has an unemployment rate of 11.6 (United States Department of Labor, 2015). Employing fifteen lifeguards may not seem like a large social change, but if the lifeguard program in Condado proves to be successful, this could spur more programs to form in other areas of the island, and more jobs would be available for those seeking one.

2.5.3 Decrease in Drowning Rate

The most significant social impact is the central reason for this project's creation: saving people's lives. A lifeguard program would lower the drowning rate and lessen the responsibility on those who are not equipped to be doing rescues. Uncertified members of the community are also put in harm's way when tasked with trying to save another person. Lifeguards are not only lifesavers; their job also entails precautionary measures like informing beach guests of water conditions and notifying swimmers to move into shallow water or away from hazards. Lifeguards are trained in the prevention of rescues along with the actual act of rescues. Having lifeguards on beaches would decrease the amount of accidents and drownings. Additional to lowering the amount of deaths on beaches, the amount of emotional stress caused on families and witnesses would decline. Ultimately, making these beaches safer makes the environment more enjoyable for all visitors.

2.6 Summary

The beaches in the Condado neighborhood are deemed as dangerous and unswimmable (M. Garcia, personal communication, November 23, 2015). Adding to this danger are uninformed tourists that are unaware and possibly intoxicated. These uneducated tourists are all at risk of these harsh conditions on the beaches due to the lack of lifeguards. The factor preventing the hotels from putting lifeguards on the beach areas in front of their hotels is the issue of being liable. The Puerto Rico Sea Grant is working alongside the Agency for Disaster and Emergency Management (AEMED), who is willing to absorb all liability for the beach, thus alleviating the hotels from any legal beach casualty issue. With a major concern mitigated, we believe that the hotels would be onboard with implementing this program on the beaches in front of them. However, the problem of funding still needs to be solved. Concluding this chapter, we highlighted the fact that an increase in the safety of the beaches would make Puerto Rico a safer destination, attracting more tourists and thus generating more revenue for the economy of Puerto Rico. Ultimately, we suggested that the use of beach fees levied by hotels would be ideal to support a lifeguarding program in the Condado neighborhood.

Chapter 3 : Methodology

In this project we focused on the funding of a lifeguard program on the high-risk beach in Condado. Due to the financial crisis in Puerto Rico, the government is unable to financially support this program. Ruperto Chaparro, the director of Puerto Rico Sea Grant, expressed the organization's interest in using tourists to bring in the needed revenue. A small fee on hotel guests could be used to fund this lifeguard program both initially and annually. Upon arriving in San Juan, our group looked to retrieve specific knowledge on possible funding structures and the social implications this program will have on the Puerto Rican community, especially in the Condado neighborhood. Using surveys and interviews, we gathered data from travelers, hotel management, lifeguards, and the government organizations. Our objectives were to:

- Determine whether the support of the government, companies, and community of Puerto Rico would help to advance this program.
- Evaluate the status of existing lifeguard programs in Puerto Rico to educate ourselves on how to establish a successful program,
- Assess the public's knowledge on water conditions, such as rip currents, high surf, and their overall swimming capability to strengthen our argument on the necessity of our project, and
- Analyze funding structures to determine the most effective way of incorporating a beach safety fee.

After compiling the data from our surveys and interviews, we analyzed the funding options to form our recommendations. A visual of our methods can be seen in Figure 3.1.

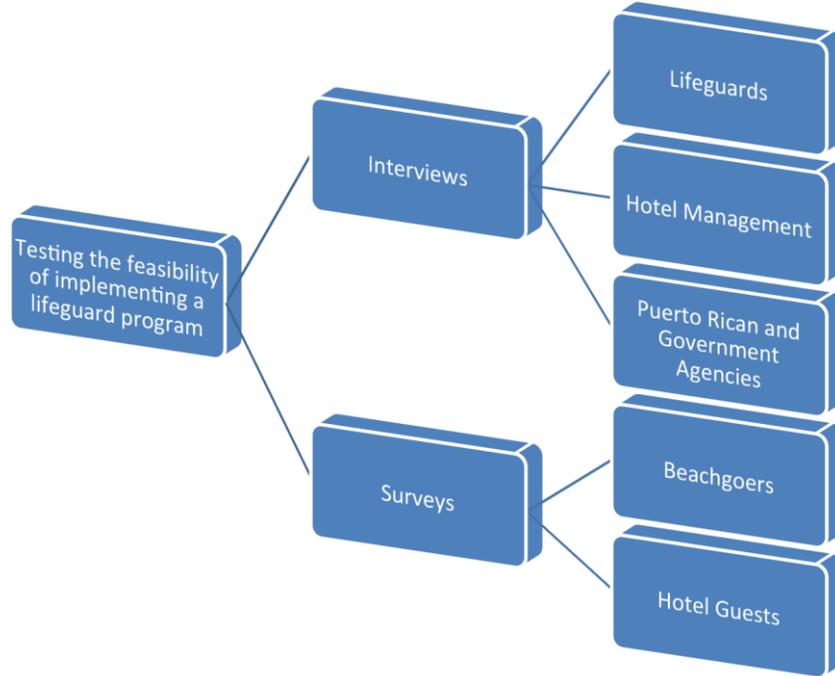


Figure 3.1: Methodology Flow Chart

3.1 Surveys

In order to achieve our goals, we needed clear evidence that there is a willingness to accept and pay a hotel beach safety fee. The first step was surveying travelers such as beachgoers. The full surveys can be found in Appendix III

To gather a sample of beachgoers, we visited several beaches along the San Juan coast. While there, we noted the most popular times of visiting and used incentives to draw willing participants. We handed out Puerto Rico Sea Grant stickers as a way to motivate visitors to fill out our survey. Our hope was to get between fifty and eighty responses and we received hundred and one.

After some locational notes (i.e. high or low risk beach), we moved into examining the respondent's water safety competence. We dove more into any differences in responses between beaches that are high or low risk and that are staffed with or without lifeguards. Avoiding

leading questions, we then collected information on the respondent's attitude towards lifeguards such as their usefulness, the amount of authority he or she gives to them, and if he or she believes in increasing, decreasing, or keeping the amount of lifeguards the same on open-water beaches. Since the Puerto Rico Sea Grant needs to convince the hotels to add a hotel beach safety fee, we were in charge of determining whether tourists would want to pay for this service. Therefore, we inquired about how much respondents would be willing to pay. At this point in our survey, we tested whether additional information about beach dangers and safety would impact respondents' views. To do so, we explained more about the true danger of Puerto Rico's beaches in the Condado neighborhood by telling them the rate of the drownings in Puerto Rico and the main causes of such incidents. We aggregated these responses and determined whether the majority of people's views are changed by this information.

These surveys were able to tell us the water safety knowledge beachgoers have leading to recommendations for increasing education initiatives. The answers given showed us the effectiveness of lifeguards on the beach and the amount of respect they are given. Additionally, a realistic range for the fee was determined.

3.2 Interviews

3.2.1 Lifeguards and their Employers

The Condado neighborhood includes most of the popular and dangerous beaches in Puerto Rico that are not staffed with lifeguards. Our team evaluated the status of other lifeguard systems since there are currently only a small number of lifeguards on select low risk beaches. Through this evaluation, we were able to locate the system's successes and failures to develop our lifeguard program more comprehensively. We used interviews to obtain information from

the lifeguards and their employers about the present safety program. The full guides can be found in Appendices IV and V. From this we were able to better understand

We traveled to Sunbay Beach in Vieques, Luquillo Beach in Luquillo, Seven Seas in Fajardo, and Escambrón Beach in San Juan. In order to properly evaluate the lifeguard system in place, we first determined the status of employment and number of lifeguards. Secondly, we looked into the degree of lifeguards' training and accidents that occur with beachgoers. Next, we examined the lifeguard's quality of equipment to be able to properly guard dangerous beaches. Lastly, we determined the public's level of respect towards the lifeguards and the current liability at these guarded beaches.

3.2.2 Hotel Management

A significant portion of our data came from interviews held with hotel management, such as President Jose Suarez of International Hospitality Enterprise (iHE). Our goal was to determine the ability of hotel management in Puerto Rico to adapt to a water safety program. We examined hotel management's interest in participating in a beach fee that would be included in the nightly room rate at hotels' neighboring beaches. The results we hoped to assemble from hotel management includes:

1. how many tourists come through the hotel in an average year,
2. if there was already a hotel beach fee or a similar expense in which we could include our fee,
3. and to gauge the management's willingness to impose this fee.

With these pieces of information our group was able to calculate the minimum fee needed to include in the nightly rates per hotel room. Without the hotels' involvement, our program would be very difficult. The facts provided to us from hotel management helped to distinguish the most

effective and legal way to establish this fee. We hoped that the evidence provided from the beachgoers surveys would gain support of the local hotels.

We originally wanted to speak with a representative from the La Concha Resort, but we were directed to the iHE. This company would be in charge of any changes that La Concha would make as they are run by this company. The information we received can be found in Appendix XVII. It was imperative that we spoke to iHE because they are an organization that governs seven different and very popular hotels in Puerto Rico. This not only cut down the time we allotted for interviews with the hotels, but also proved as a helpful resource for the advancement of our project. We were able to meet with Suarez and the chief of security to ask a few questions about implementing a lifeguard program on beaches in front of some of their hotels. This interview can be found in Appendix XVIII.

In a follow-up interview, we showed them the statistics our group collected from the beachgoers. We took note of the management's new response on the necessity of the lifeguard program and gained insight on whether this fee could cause hotel guests to stay in alternative hotels decreasing their profit. Through this task we assessed the hotel management's interest in partnering with our group and the Sea Grant to apply the beach fee to their business. The full interview outline can be found in Appendix VI.

3.2.3 Organizations

The next step after surveying hotel staff and hotel officials was to contact and interview personnel who are involved with the Puerto Rican government. We formed a contact list, with the help of Chaparro, which includes the Department of Natural and Environmental Resources (DNER), the Sports and Recreation Department (DRD), Tourism Company, International Hospitality Enterprise (iHE), the Puerto Rico Tourism Company (PRTC), the Puerto Rico Hotel

and Tourism Association (PRHTA), and the City Emergency Management. This contact list can be found in Appendix VII. The interview guide template for the government organizations differs from the surveys conducted on the beaches because it is structured to be more of an open-ended conversation. The insight we hope to gather would pertain to prior experiences with funding programs, as well as other fee options.

The interview began a conversation on the willingness of the organization to partake in the initiation of a beach fee in Puerto Rico. We then introduced our idea of a fee executed by the hotels and asked about their assessment of such an approach or if there were alternative options. Next, we asked the organization about their previous and present involvement in other beach or water safety programs. There were follow-up questions if they responded “yes” to being involved in such programs.

The interview concluded through expressing our interest in knowing the ability and willingness for these organizations to help implement the lifeguard program. If the official sounded hesitant we asked if the uncertainty lied within the program or our proposal. This information was used to direct us to adjust our project. The full interview guide template for the government organization officials can be found in Appendix VIII.

Our first interview was with the Sports and Recreation Department. The interview was held at the Sports and Recreation Department headquarters with the sub-secretary, Juan Figueroa. Figueroa has been working for this organization for about fourteen months. As sub-secretary, he works alongside the National Parks organization, and the practical part of the lifesaver junction. He is also in charge of certifying physical trainers, coaches, and much more. The DRD was able to get us in contact with the Puerto Rico Tourism Company to gain more

insight on the taxation formula and the Blue Flag Program since they were unable to provide the information themselves (J. Figueroa, personal communication, November 3, 2015).

As mentioned above, the next interview was set up with the Puerto Rico Tourism Company. We planned to meet with the sub-director Luis Daniel, but he was unavailable for the meeting so we interviewed Carolina Morales, the Sustainable Tourism Development Officer. Carolina has been working for the Tourism Company for nine years in the Sustainable Tourism Division at the Planning and Development Office. Carolina and other colleagues are members of the Puerto Rico Interagency Beach Management Board. She suggested that it would be more beneficial to meet with the Organización Pro Ambiente Sostenible (OPAS) to further our knowledge on how beaches become Blue Flag certified. She also mentioned to set up an interview with the Department of Natural and Environmental Resources (DNER), who will provide us with more information on the Beach Board Interagency (C. Morales, personal communication, November 10, 2015).

Through the Tourism Company we were put in contact with Maria Elena Garcia, the executive director and National Blue Flag Coordinator of Organización Pro Ambiente Sostenible (OPAS). Garcia provided our group with detailed information on Blue Flag beaches as well as the necessary steps required to become a Blue Flag beach (M. Garcia, personal communication, November 23, 2015).

We also conducted an interview with Ernesto Diaz who has served as the Director of Puerto Rico Coastal Management for the past twenty years for the Department of Natural and Environmental Resources and the Executive Secretary for the beach management board. He specializes with the guidance of public and private development in coastal areas, active management of coastal and marine resources, development of community participation,

environmental education, and scientific research. Their jurisdiction is within one kilometer inland and nine nautical miles offshore of Puerto Rico. The DNER gave our group a better understanding of the structure of the governmental system, what the different sectors and organizations are in charge of, and how we would be able to utilize them to our project's advantage (E. Diaz, personal communication, November 24, 2015).

One of our final interviews was with the Director of Government Affairs, Roberto Varela at the Puerto Rico Hotel and Tourism Association. He oversees many committees at the company. Varela has been in contact with our sponsor for a long time, working alongside each other to come up with a funding solution for the lifeguard program. He proposed many great recommendations and concerns to contemplate for our project before presenting to the PRHTA board of hotels (R. Varela, personal communication, December 8, 2015).

In our final interview, we spoke with the assistant of Nazario Lugo, Orlando Gonzalez, about the City of San Juan Emergency Management Office's involvement with our project. He would be able to provide Ruperto Chaparro with planning assistance in the formation of this program as well as getting in direct contact with city officials including the Mayor (O. Gonzalez, personal communication, December 10, 2015).

3.3 Financial Analysis

Once we received feedback from the hotel guests and the hotel management we were able to compile our results. We were able to figure the willingness of the public to pay a fee, as well as the hotels' willingness to charge one. We then identified the preferred price range and compared it to what we would charge to receive proper finances. The program will need \$840,879 as a startup cost and \$613,744 every year after. First, we divided the amount of funding needed by the average annual amount of booked rooms in the hotels to find a room charge rate.

We gained access to some of these numbers after speaking to hotel management (see Appendix XVII). A hotel with more rooms will be responsible for more of the total cost of the lifeguard program. This per room charge was compared against the data collected from the tourists regarding the price they were willing to pay per night. If the total amount of income from the hotel charges are higher than what we need, we would be able to develop the lifeguard program fully, add jobs for the local community, and possibly decrease the expense in future years. In contrast, if the amount falls short of effectively operating the program, we would need to determine another way to contribute to the funding. We established all of our options through mathematics and provided the Puerto Rico Sea Grant with the statistics needed to progress to the implementation step.

3.4 Ethical Considerations

Ethical considerations stemmed from wanting to keep all of the interviewees comfortable and willing to participate in our study. Discussing drownings could potentially trigger memories of past traumas and we did not want to frighten the visitors away from the island's beaches. This had the possibility of hindering open and honest conversation. We respected confidentiality in all our interviews and surveys. The details we received could be sensitive to disclosure due to personal aspects, along with proprietary material shared to us by hotel management and the government. In all of our interviews, we guaranteed confidentiality.

3.5 Summary

In this chapter we established who was involved in our data collection and the stakeholders we worked with to propel this lifeguard program. At the conclusion of the interviews and surveys we were able to formulate a general opinion of the lifeguard program. At

this point, we knew if the travelers were willing to pay for a beach safety fee, if the hotels were willing to incorporate it into their room rates, if there were lifeguards to staff these hazardous beaches, and if the government was willing to help enforce and regulate the monetary collection. This allowed us to make recommendations as well to decide whether or not the advancement of the lifeguard program will be effective or possible in the Condado neighborhood. The Gantt chart for our project can be found in Appendix IX.

Chapter 4 : Results and Analysis

Our results are derived from our surveys and interviews. We have recorded all of these documents in the appropriate appendix. The aggregate survey responses can be found in Appendix X. In this section, our findings are stated and analyzed in order of objectives.

4.1 Objective 1: Support of a Lifeguard Program

Through thorough evaluation of our surveys and interviews, we determined that the support of the government, companies, and community of Puerto Rico is needed to advance this program.

4.1.1 Beachgoers' Support

In our survey responses, 72.3% of the respondents selected that lifeguards are extremely important, given that most of these beaches are not watched by a certified lifeguard. 59.4% of respondents noted that there were no lifeguards and that there should be more on duty, while 17.8% were unsure if there were lifeguards present. These details can be viewed in Figures 4.1 and 4.2 below.

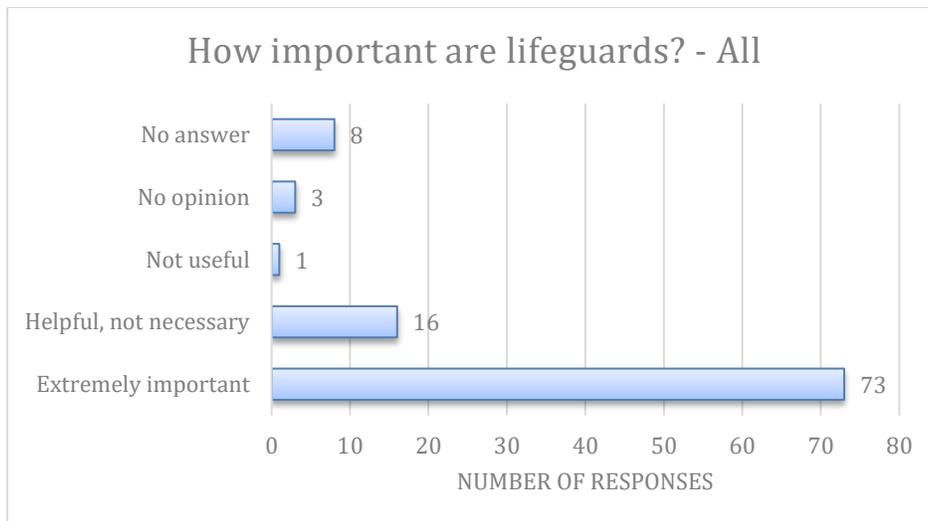


Figure 4.1: How important are lifeguards? - All (n=101)

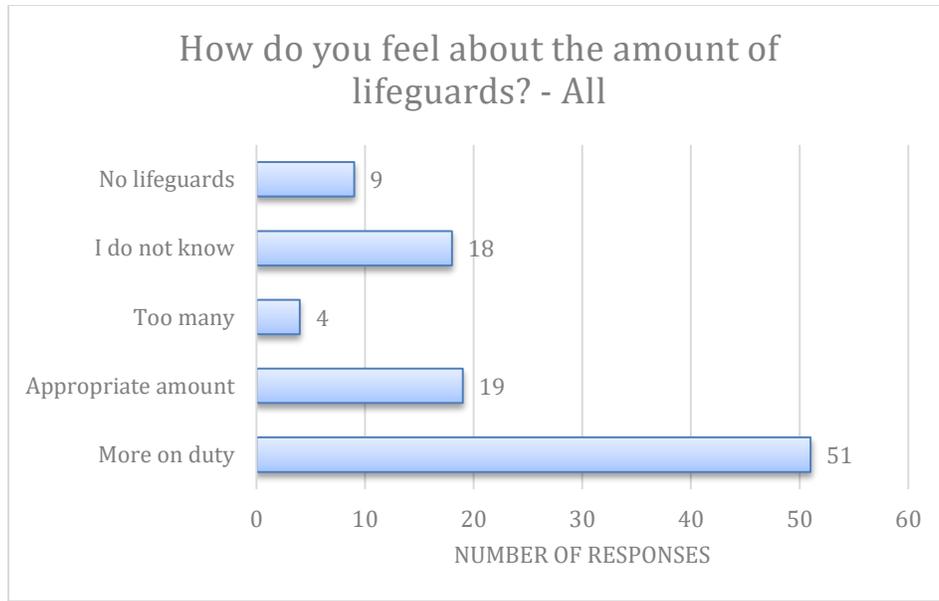


Figure 4.2: How do you feel about the amount of lifeguards? - All (n=101)

Strictly looking at the Condado surveys, as shown in Appendix XXIV, one can see that these beachgoers are very eager to help get a lifeguard program active on these beaches. About 86% of these respondents listed lifeguards as extremely important and almost 75% selected a hotel fee as their preferred method of payment. Most respondents on Condado Beach were residing in the bordering hotels so these responses confirm that a hotel fee is the most convenient and welcome tactic. Since this project was restricted to the Condado neighborhood, these responses are very positive for our work. We found that we have support from beachgoers.

Another topic explored with surveys were responses given by residents versus non-residents of Puerto Rico (i.e. business and leisure travelers). The data from the surveys was given a more detailed look to ensure that the results were not be skewed in any way. We expected that residents would be indifferent towards the amount of lifeguards on the beach because this is what they are accustomed to. There are two graphs in Appendix XXIV that show two of the survey questions broken up between these two groups for all of the beaches surveyed and for those just from Condado. These graphs clearly display how the residents of Puerto Rico are in agreement

with the tourists. We were surprised that both parties feel strongly that there should be lifeguards at these beaches, especially at Condado Beach. The support of both tourists and residents allows us to further our project's production.

4.1.2 Organizations' Support

We were uninformed on the process and complications of our project. As we presented our project to organizations, they were able to guide us to where we could further take our project or as to which other organizations would be beneficial to contact. All the interviews referenced below can be found in Appendices XIV, XVI through XVIII, and XX through XXII. We gained support from the organizations that we spoke with. We believed that the Tourism Company held a lot of authority and that with their support, we would be able to enforce the lifeguard program. However, they could not provide any financial support but would try their best through other resources to help our efforts. Given that hotels are invested in their guests' safety, we thought that the International Hospitality Enterprise (iHE) would be welcoming to our proposal. The iHE agreed to partner with our group and assess our different proposals if we get the credibility. The iHE suggested that we speak with Orlando Gonzalez, from the City of San Juan Emergency Management Office. He presented a lot of information in regards to planning and budgeting that can be passed along to our sponsor to use for the continuation of this project. Since the PRHTA holds the collective say for all the Puerto Rican hotels, inns, and bed and breakfasts, we consulted with them (E. Diaz, personal communication, November 24, 2015). We found out that with their support we would be able to suggest our proposal to the hotels. We identified that having all of these organizations in agreeance would allow us to recommend plausible and successful solutions.

4.2 Objective 2: Existing Lifeguard Programs

In order to understand the complexities behind establishing a successful lifeguard program, our team conducted a number of interviews with lifeguards. Finding lifeguards around the island of Puerto Rico was a greater challenge than we originally expected. With the help of Juan Figueroa from the Sports and Recreation Department and Maria Elena Garcia from Organización Pro Ambiente Sostenible (OPAS), we were put in contact with lifeguards from the Blue Flag beaches at Seven Seas, Luquillo, and Escambrón. Seven Seas and Luquillo are run by the Sports and Recreation Department and Escambrón is run by the Municipality of San Juan. The ultimate goal for the lifeguard interviews was to evaluate the current status of their respective beaches, as well as to gather opinions on the implementation of a lifeguard program on Condado Beach. The full interviews can be found in Appendices XI, XII, and XIII.

We found many similarities between the lifeguard's responses from Seven Seas and Luquillo beaches. During the high season these two beaches see between 20,000 and 40,000 beachgoers so it is imperative for management of these beaches to follow the Blue Flag credentials. The lifeguards here have certifications through the Red Cross and the United States Lifeguard Association (USLA). These beaches were equipped with new and relevant lifesaving materials. On a daily basis, the lifeguards at Luquillo mostly make use of a floatation device and the lifeguard towers. At Seven Seas there were towers, stretchers, ATVs, and rescue boards present and ready to be used in case of an emergency. Guards from both Luquillo and Seven Seas mentioned that they are highly satisfied with their salary and job as a whole.

The information we received from the lifeguards at Escambrón beach was significantly different from those received at Luquillo and Seven Seas Beaches. One lifeguard was Red Cross certified without the open-water portion of the certification and the other was YMCA certified. Lifeguards at this beach are responsible for all of their certifications, uniforms, and equipment

costs. Their salary does not allow them to live adequately and pay for these necessary costs to be a skilled and equipped lifeguard. There is no rescue board at this beach and the oxygen tank is not full. There is a stretcher and a wheelchair, however both are broken. The only piece of equipment these lifeguards have is a first aid kit. The lifeguards expressed how unsatisfied they are with their job conditions and pay scale, and it reflects upon the beach.

The most significant difference we encountered between these three beaches was the level of respect the beachgoers showed towards the lifeguards. Luquillo lifeguards felt that 90% of the beachgoers adhere to the rules of the beach and respect the lifeguards. At Escambrón Beach, the lifeguards felt the exact opposite and attributed the lack of respect from the public beachgoers to the numerous minor accidents on the beach. Seven Seas and Luquillo were well kept, up to date, and had no problems with public adherence to the rules. We theorized that a neglected beach, minimal equipment, and negative working conditions of the lifeguards leads to disrespect from the beachgoers.

Moving forward with our project on Condado Beach, we believe that it would be most effective if the lifeguards were supplied with adequate materials and a proper salary. Originally we intended to have Condado Beach become Blue Flag certified in hopes that it would aid in the process of creating a successful lifeguard program. However, according to Garcia, Condado is deemed unswimmable and thus unable to become certified. Under proper management and funds, the future lifeguard program of Condado Beach will be able to run successfully. It is imperative for the Sea Grant to research further into the organizations they will choose to manage Condado Beach, especially concerning the amount of benefits they will offer their employees.

During our stay in Puerto Rico, we witnessed a drowning rescue. A young boy was stuck in the rocks in front of the Marriott Condado. The child was yelling and waving his arms to indicate he needed help. No one on the beach moved besides a Marriott worker, who threw off his shoes and fanny pack before darting into the water to rescue the boy. He was able to push the child into shore on the next wave. However, the Marriott worker then found himself stuck in the current and was unable to make it back to shore. Luckily, a group of surfers noticed what was going on and took action. This surfer seemed well seasoned in rescuing victims from the powerful Condado waters. He managed to get the worker on shore with the help of his board. The Marriott worker scrapped his knees badly but continued to say that this event frequently occurs. The Marriott worker and surf instructor were not legally certified and put their lives at risk in the Condado waters. At this point, we had solid evidence.

Through our lifeguard interviews and our experiences at Condado Beach we were able to educate ourselves on the conditions needed to maintain a safe beach. We determined that this requires lifeguards. We uncovered controllable qualities needed in order to preserve a successful lifeguard program, as following:

- Reliable management
- Consistent funding
- Adequate lifeguard salary
- Up-to-date and usable lifeguard equipment
- Certifications and trainings covered
- Uniforms provided

4.3 Objective 3: Lack of Aquatic Safety Knowledge

In this section we cover the understanding beachgoers have on water safety and a few opportunities that could provide as resources to further educate the public.

4.3.1 Beachgoers' Knowledge

On the subject of aquatic ability and knowledge, we wanted to evaluate if the swimmers' capabilities were enough to safely enjoy the beach. All graphs can be seen in Appendix XXIV. We found that even though 60% of respondents had taken swimming lessons before, most would merely consider themselves intermediate swimmers or only comfortable in swimming pools. Over 68% of respondents claimed to know what a rip current was, but less than 35% stated the correct method of escaping one. These results show that the overall adequacy of a beachgoer's swimming ability and beach safety education is below the needed level in order to remain safe on these dangerous San Juan beaches. We were surprised that the visitors and residents were not more prepared for the coastal terrain of the island. With uneducated and unprotected beachgoers, the amount of drownings will only increase. It is imperative that Puerto Rico focuses on preventive measures such as water education and placing lifeguards on dangerous beaches such as Condado Beach.

When surveying beachgoers on their opinion on the safety of the beach they were visiting, over two thirds said that they find the beach to be dangerous or have average beach conditions. Only 8% realized these beaches are extremely dangerous and considered unswimmable and almost 20% of respondents' believed the beach was safe (M. Garcia, personal communication, November 3, 2015). This data can be seen in Figure 4.3 below.

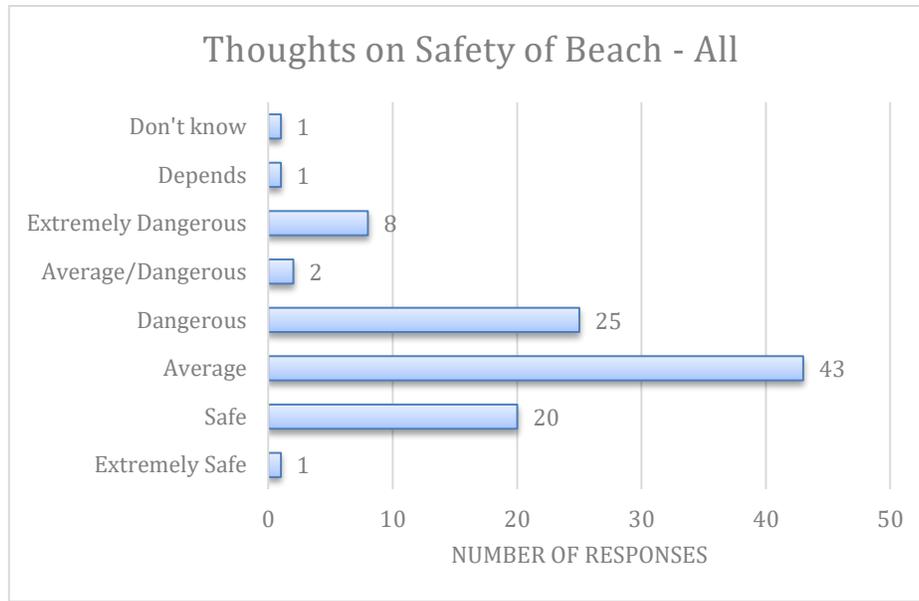


Figure 4.3: Thoughts on Safety of Beach – All (n=101)

This information on the lack of aquatic safety is vital to show our stakeholders that tourists need to be better informed before beach use.

4.3.2 Awareness Opportunities

Berliz Moralez from the Puerto Rico Sea Grant provided our group with a website resource on oceanic conditions surrounding the island. Puerto Rico’s beaches are mapped out with their conditions on a website called Caribbean Coastal Ocean Observing System (caricoos.org), created by the Caribbean Regional Association for Integrated Coastal Ocean Observation. This website has color coordinated markers indicating the different wave heights at the beach and gives information on the tides, currents, winds, and water quality. If this website was used more widely, many drownings could be prevented.

The Department of Natural and Environmental Resources also gave us information on beach safety and conditions. Diaz suggested adding an educational portion where we would ask airlines to show a landing video to inform passengers of the dangerous conditions of the beaches

as well as different donation opportunities for the lifeguard program. This would serve as another preventative measure of drownings and a great addition in the future once the lifeguard program is in action.

4.4 Objective 4: Opinions on Funding

We determined our funding options through specific survey questions and details gathered from a select group of organizations' interviews.

4.4.1 Beachgoers Favor Hotel Fee

In the last unit of survey questions, respondents were asked to consider how much they would be willing to pay per night on a hotel fee and which fund collection means they would be most likely to utilize. Close to 60% of respondents selected a hotel fee as their preferred collection method, which is reassuring for our project (see Figure 4.4).

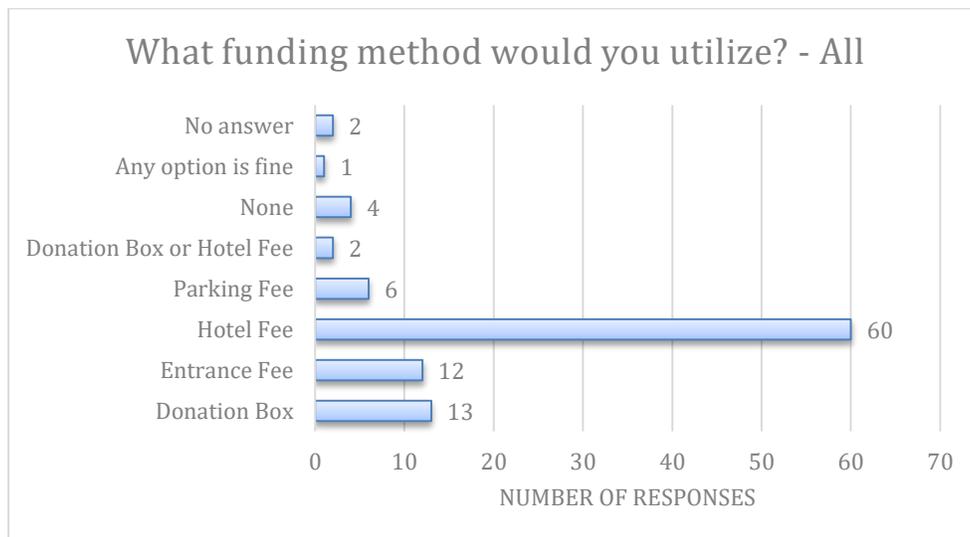


Figure 4.4: What funding method would you utilize? - All (n=101)

When statistically analyzing the amount respondents said they would be willing to pay per night in addition to their hotel room charge, we found that three dollars would be a reasonable amount to enforce. In the analysis we assumed all "\$5+" selections were \$5; therefore, all statistical results are conservative. With 95% and 99% confidence, beachgoers are willing to pay between

\$3.41 and \$4.05 and between \$3.31 and \$4.15 per night, respectively. The mean of the responses was \$3.73 and both the median and mode were that the individual would be willing to pay \$5 or more. It was very important to look at this survey question more in depth so that the Puerto Rico Sea Grant can report a fee amount that most people are comfortable paying for. When we were creating the surveying question, we thought that the \$4 or \$5+ fee would not be a favorable choice, but it ended up being the most frequently selected response. We acknowledge the limitations of survey results due to social desirability. Respondents may have selected a response in which they felt was the socially acceptable answer rather than their true opinion. The raw responses for this question can be found in Figure 4.5.

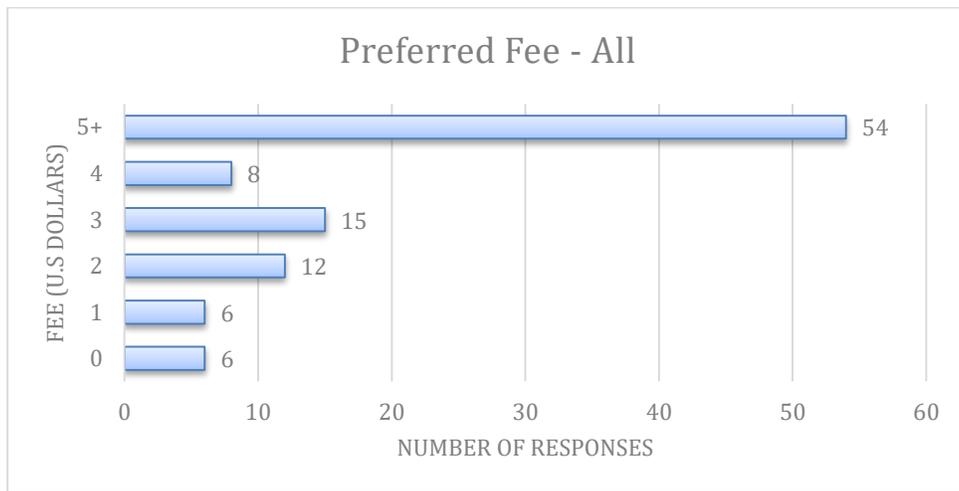


Figure 4.5: Preferred Fee – All (n=101)

Looking again at just the Condado surveys, one can see that these beachgoers are more than willing to pay our proposed fee. A large 75% of respondents selected a hotel fee as their preferred method of payment. Also, the results for the fee amount from Condado are even more strongly weighted on the higher side (see Appendix XXIV). We found that the respondents' willingness to pay a five or more dollar fee is very affirmative for the progression of putting lifeguards on this beach. Since the pilot project is only for Condado Beach, we would have more than enough funds to run the lifeguard program if we were to charge a smaller amount.

Responses given by residents versus non-residents were also examined for this question.

Figure 4.6 shows these two groups' responses for all of the beaches surveyed. The graph for those just from Condado can be found in Appendix XXIV.

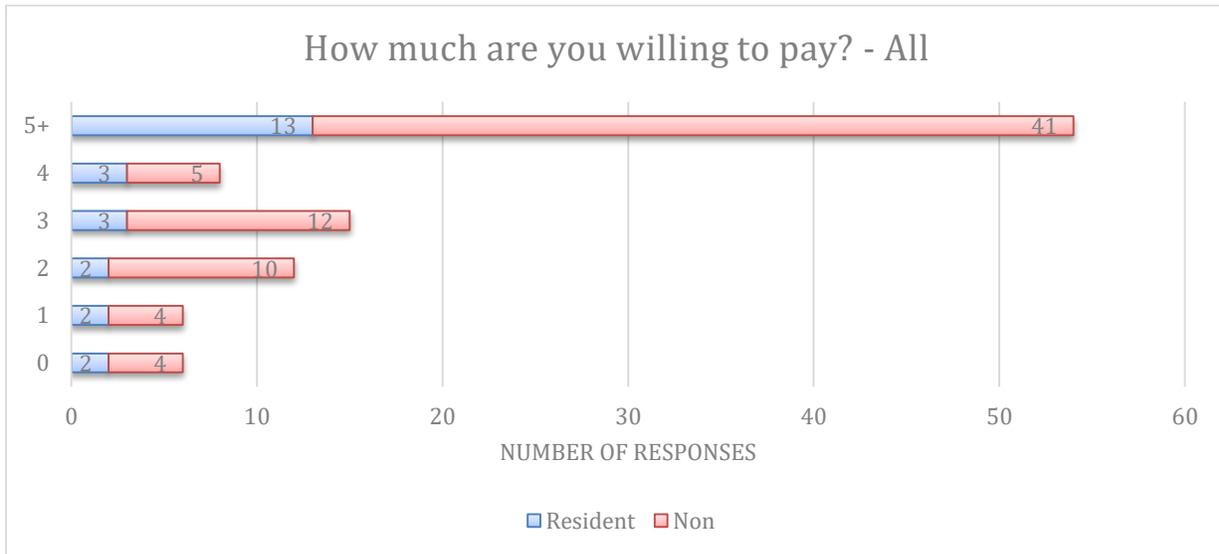


Figure 4.6: How much are you willing to pay? - All - Residents vs. Non Residents (n=101)

Due to the current economic status of Puerto Rico, we found it was surprising that residents were nearly in agreement with the rest of survey respondents regarding the amount they would be willing to pay to fund a lifeguard program. While our suggested fee would not be levied on the residents of Puerto Rico, these results verify that the residents also recognize a problem with these unguarded beaches and want a change to create a safer environment for themselves and their families.

4.4.2 Hotel Fee Infeasibility

We were disappointed to learn that most of the organizations wanted us to shy away from the hotel fee even though beachgoers were willing to pay more than what we would need to fund such a program. The Sports and Recreation Department felt that a hotel fee would be excessive due to the many fees added onto the already expensive room rate. Similarly, Suarez from the International Hospitality Enterprise (iHE) was completely against the idea of a new fee on the

hotel charge, as this would put their hotels at a competitive disadvantage. He said he would be able to reallocate money from their general revenues to fully fund the lifeguard program (J. Suarez, personal communication, November 11, 2015). Morales from Puerto Rico Tourism Company mentioned that a hotel fee would be difficult to manage because there is a lot of gray area of who would be collecting and keeping track of the money. She urged not to put any more taxes on tourists and acknowledged the fact that the government is against any additional fees (C. Morales, personal communication, November 10, 2015). Diaz from the Department of Natural and Environmental Resources told us about a previous tax that was imposed on hotels by the municipality. There was a lawsuit filed against it, so the tax had to be removed. He advised us to steer clear of the taxation and instead, to consider adding a voluntary contribution to the hotel agreement form. The Puerto Rico Hotel and Tourism Association is skeptical on such a fee because they do not want to start a negative trend of using hotels to get the government money and open the door for unnecessary fees (R. Varela, personal communication, December 8, 2015). The City Emergency Director secretary, Gonzalez, informed us that the addition of a hotel fee would take a long time to be approved and that we would need to have a bulletproof budget to present to the city (O. Gonzalez, personal communication, December 10, 2015). The current economic status of Puerto Rico and the competitive nature of the hotel industry makes a hotel fee not feasible at this time.

During our interview with Suarez, he informed us that they had just recently put an undercover lifeguard on the beach and since then they have seen a positive change on the safety of their hotel guests in the open-water. He believed that if there are clear results of the lifeguards' substantial impact on the lives of their hotel guests, other hotels would conceive and adopt a lifeguard program. Both Suarez and the chief of security mentioned the difficulty they have had

with getting the Courtyard Marriott in Condado in accordance with privately funding a lifeguard program. They suggested for us to try and get in contact with the Marriott, to receive their input (J. Suarez, personal communication, November 11, 2015). We expected the Marriott would to want to join in hopes of protecting their guests because they offer beach access through their hotel. When we finally made contact with them we received complete negativity towards any lifeguard program that would be in coordinates with their hotel. Their reasoning was that Condado Beach is public and they do not want to be liable for any incidents that could occur if they were to implement a lifeguard. This hinders us from getting multiple, privately funded programs to cover Condado Beach. Therefore, our next best option would be for Suarez to agree to put lifeguards on the entire strip of Condado Beach through his own revenues or a voluntary fee.

As we mentioned prior, Varela from PRHTA is not keen on the idea of a hotel fee because the funds would need strict criteria so that the hotel is not handling the import and export of the funds. Along those lines, Varela stated that we would need to come up with an entity to be responsible for controlling the money and to make sure that the funds are used properly. Originally we thought the PRHTA could enforce a hotel fee, but they can only make suggestions. We first discussed the hotel room tax funds, in which there used to be enough money available for our lifeguard program, but the government acquired it to pay off debt. He then gave us insight on his idea of looking into the chance games funds and amending the corresponding laws to fund the lifeguard program. Chance games funds refer to the taxes collected from casinos. Approximately twenty-five million dollars of such funds goes straight to the Department of Treasury annually, but it is unsure of what the money is being used for. Varela feels that if we can redirect that money, it could be put towards our program. The more

organizations in support of this idea, the easier it will be to go through the lobbying process (R. Varela, personal communication, December 8, 2015). Discovering this option gave us an alternate method to gain funds if the hotel fee is later deemed impossible.

4.5 Summary

With all the results collected, we found out that the beachgoers, both residents and tourists, hotels, and the organizations are all in support of this lifeguard program. Everyone identifies that these beaches are dangerous and in need of lifeguards.

The lifeguards at Seven Seas and Luquillo were more satisfied with their jobs than the lifeguards at Escambrón. A big difference we noticed was that the lifeguards at Escambrón did not have the beachgoers' respect as did the lifeguards on other two beaches. With the right management and funding, a lifeguard program on Condado Beach could become a reality.

Beach safety education at the San Juan beaches was alarmingly low. Only 60% of respondents knew how to swim and less than 35% stated the correct method of escaping a rip current. Beachgoers' swimming ability and beach safety education is below the needed level in order to remain safe on these dangerous beaches. This emphasizes the need for lifeguards to be placed on Condado Beach.

As shown by the results from the surveys, the beachgoers are willing to pay a fee that would fund this lifeguard program in the form of a hotel charge, while the hotels and organizations are against this idea. Diaz from the Department of Natural and Environmental Resources mentioned that instead of a tax being introduced, we should consider a voluntary contribution that would be offered to hotel guests as they are checking in. Separately, International Hospitality Enterprise is willing to fund lifeguards in front of his hotel from their hotels' revenue without charging guests. Some other hotels do not see why they should put

lifeguards on the beach since it is public. Speaking to Valera from Puerto Rico Hotel and Tourism Association, he advised us to create an entity to collect and manage the funds of the lifeguard program. This would ensure that all the money being collected for the program is properly used. After considering our findings on the infeasibility of an enforced hotel fee, we formulated a few options to fund the lifeguard program.

Chapter 5 : Conclusions and Recommendations

Our conclusions and recommendations were derived through research and deep analysis of our findings. This section will briefly summarize our findings by objectives, which can be found in our methodology section. Our reasonings and interpretations relate to the overall mission of our project and aid us in providing practical recommendations.

5.1 Objective 1 Conclusion: Support of a Lifeguard Program

The surveys we conducted at Condado Beach supported that lifeguards are needed and wanted. Many beachgoers are unaware of the dangers of the waters, but still feel that having a lifeguard on the beach would make the area safer. Both the hotels and organizations we interviewed agreed with the beachgoers on the need for lifeguards, but did not approve of the hotel fee. They did support the overall idea of our project, but gave suggestions for other funding options. With the support of the beachgoers, hotel management, and government organizations, our project will be able to continue its production in becoming a successful lifeguard program.

5.2 Objective 2 Conclusion: Existing Lifeguard Programs

Through interviews with lifeguards we evaluated the current status of their respective beaches, as well as gathered opinions on the implementation of a lifeguard program on Condado Beach. The main difference between the beaches we visited with lifeguards, which are managed by two different organizations, is the level of respect beachgoers show towards lifeguards. One beach was in need of renovations and the lifeguards felt that they were in serious lack of support from management and the government. These lifeguards felt that the majority of the beachgoers did not respect them or the rules of the beach. We theorize that neglecting beaches leads to the

lack of respect from the beachgoers. Under proper management and funding the future lifeguard program at Condado Beach will thrive.

5.3 Objective 3 Conclusion: Public Knowledge

From the results obtained from the surveys, we were able to identify a serious lack of water safety knowledge from the beachgoers. There are many other factors, besides it being sunny, that one should take into consideration when going to the beach. The Caribbean Coastal Ocean Observing System website (caricoos.org) is able to provide information on the beach conditions for beach visitors' use. The main issue is the ignorance of these beach conditions. There are signs posted educating people on the conditions of the beach; however, people still tend not to look at these signs before entering the water. Most of the beachgoers considered their ability to swim as intermediate or pool exclusive. A person must first identify their swimming ability, check the conditions of the beach, and then decide whether they are capable of swimming in these conditions.

5.4 Objective 4 Conclusion: Opinions on Funding

When analyzing funding structures to determine the most appropriate and effective method for a lifeguard program, we recognized several time dependent methods. We found that a majority of beachgoers selected a hotel fee as their preferred collection method and that three dollars would be a conservative amount respondents are willing to pay. These responses are very affirmative for the progression of a hotel fee; beachgoers recognize a problem with these unguarded beaches and want a safer environment for themselves and their families. However, after speaking with government and local organizations, we determined that a fee on the tourists would be unlikely to happen in the near future. From our interview with the Puerto Rico Hotel

and Tourism Association, we learned that there is a possibility of acquiring money from the hotel's chance games funds collected by the Department of Treasury (R. Varela, personal communication, December 8, 2015). We also discovered that in the short term, a plausible funding source would be from the hotel's general revenue. The former methods would require legislation and lobbying to change laws.

5.5 Recommendations

Short Term

1. **We recommend that hotels implement a donation option on their guests' hotel charge to supplement the funds they provide to the lifeguard program.**

In the short term, the private sector could fund this program. We suggest that focus is put into gaining the Condado Marriott's involvement additionally. To decrease the amount of funds the hotels must supply, we also propose a voluntary fee or "round-up" option to supplement the Sea Grant's lifeguard program. This has no effect on the government and residents, is not enforced on tourists, and would be the quickest means for funding.

2. **We recommend the use of an aquatic safety handout to educate the public on Puerto Rican water conditions.**

We noted that people do not check beach conditions before swimming, so we created a handout to educate the beachgoers on rip currents and how to escape them. It also has a link to the CariCOOS website. This can be seen in Appendix XXIII. Hotels either would hand these to their guests upon checking in or provide them in their hotel room. This would increase the beachgoers' aquatic safety education and awareness.

Long Term

- 3. We recommend that the chance games funds going to the Department of Treasury are looked into more thoroughly for a possible reallocation.**

Once the location and use of these moneys is determined, this information can be used to discuss with legislation about the reallocation of these funds. If this method of collection is deemed conceivable, we suggest lobbying to amend the chance game funds to the Sea Grant's lifeguard program. The downfall of this recommendation is how lengthy the process may be.

- 4. We recommend that our survey data is presented to the hotels and to government officials to persuade them to enforce a hotel fee to fund the lifeguard program.**

With our survey results portraying tourists' willingness to pay over double the fee we would recommend, we advise that these statistics are displayed to the Puerto Rico Hotel and Tourism Association Board and other government officials in order to convince these parties to enforce a fee to fund the lifeguard program. There is no financial cost on the government and residents. However, the task of getting government support through legislation may be long.

- 5. We recommend that the program's budget covers the entire cost of the lifeguards' and beach's equipment.**

It is imperative to keep all parties of the program happy and satisfied. A major aspect of this program is the lifeguards themselves. In order to keep the program running efficiently, we recommend the cost of uniforms, trainings, certifications, and equipment is covered. With the proper equipment and trainings these lifeguards will earn the respect of the beachgoers. Safety precautions will be easier to address and improve the quality of the beach.

5.6 Conclusion

After gathering data and information from beachgoers, government agencies, and hotels, the Puerto Rico Sea Grant has ample information to pursue a lifeguard program on Condado Beach. Our work has provided direction to acquire funding to expand this lifeguard program throughout the island. Puerto Rico will become the ideal tourist site for visitors with the promotion of beautiful and safe beaches. The lifeguard program will also create many jobs from the hiring of lifeguards, to the training of the lifeguard personnel, and to the construction of the lifeguard towers. This will increase the Puerto Rican employment rate. By increasing water safety and educating beachgoers we hope to see a drastic decrease in the drowning rate in Puerto Rico in future years. This project will have an overall positive impact on the entire island of Puerto Rico. Even if our work in Puerto Rico saves one life, we will know our project has made an impact.

Chapter 6 Future Research

We recommend another project to create an educational airline video to inform visitors of Puerto Rico. During our interview with Ernesto Diaz, the sub-director of the Department of Natural and Environmental Resources (DNER), he mentioned that it would be beneficial to introduce an educational aspect to our project. He proposed a video to be played on airplanes upon arrival in Puerto Rico, showing passengers places to visit, but also to warn them of the dangerous beaches and urge them to be careful when swimming. This way, the tourists would have to watch the video, increasing their awareness and ability to keep themselves and their loved ones safe at the beach. This video could also include information on donation options to provide additional funding for the lifeguard program. This could be a project with the Department of Natural and Environmental Resources focused more on increasing the awareness of the dangerous beach conditions.

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Appendices

Appendix I: Condado Beach Staffing Costs

Source: Puerto Rico Sea Grant

Condado Beach Staffing Costs

2080 hrs/year no vacation or illness
1664 hrs/year including vacation, illness, training

Staffing Levels

Regular Lifeguards

5 Per day @ 8 hrs/day
14,600 Hours per year
8.77 Regular lifeguards (incremental)
9.00 Regular lifeguards (total number)

Senior Lifeguards

1 Per day @ 8 hrs/day
2,920 Hours per year
1.75 Senior lifeguards (incremental)
2.00 Senior lifeguards (total number)

Lifeguard Sergeant (first line supervisor)

1 Per day @ 8 hrs/day
2,920 Hours per year
1.75 Lifeguard sergeants on staff
2.00 Lifeguard sergeants (total number)

Lifeguard Lieutenant (second line supervisor)

1 Five days per week, 8 hrs/day

Lifeguard Chief (program administrator)

1 Five days per week, 8 hrs/day

Annual Staffing Costs

Regular Lifeguards

\$30,680 Annually Per hr: \$13.50 to \$16.00 Avg: \$14.75
\$6,136.0 Payroll taxes and benefits @ 20%
\$36,816.0 Cost per employee
\$331,344 Total per year

Senior Lifeguards (above +10%)

\$33,748 Annually Per hr: \$14.85 to \$17.60 Avg: \$16.23
\$6,749.6 Payroll taxes and benefits @ 20%
\$40,498 Cost per employee
\$80,995 Total per year

Lifeguard Sergeant (above +10%)

\$37,123 Annually Per hr: \$16.34 to \$19.36 Avg: \$17.85
\$7,424.6 Payroll taxes and benefits @ 20%
\$44,547 Cost per employee
\$89,095 Total per year

Lifeguard Lieutenant (above +10%)

\$40,835 Annually Per hr: \$17.97 to \$21.30 Avg: \$19.63
\$8,167.0 Payroll taxes and benefits @ 20%
\$49,002 Cost per employee
\$49,002 Total per year

Lifeguard Chief (above +10%)

\$44,919 Annually Per hr: \$19.77 to \$23.43 Avg: \$21.60
\$8,983.7 Payroll taxes and benefits @ 20%
\$53,902 Cost per employee
\$26,951.15 Total per year (shared cost with St. Regis)

\$577,387 Total Personnel Cost

Initial Training Academy

40 Basic hours lifeguard training
40 Emergency Medical Responder
16 UTV training
40 Personal watercraft rescuer
136 Per person

\$16,524	9 Lifeguards
\$4,039	2 Senior lifeguards
\$4,443	2 Lifeguard Sergeants
\$2,444	1 Lifeguard Lieutenant
\$2,688	1 Lifeguard Chief
\$6,800	2 Instructors @\$25/hr
\$36,938	Total

Appendix II: Condado Ocean Budget Expenses

Source: Puerto Rico Sea Grant

Expense Items	Cost Per Unit	Startup Quantity	Startup Budget	Recurring cost quantity	Recurring cost budget
Professional Fees (Certifications)					
Agency Membership (USLA)	\$300.00	1	\$300.00		\$100.00
CPR	\$40.00	15	\$600.00		\$600.00
Emergency Medical Responder	\$60.00	15	\$900.00		\$300.00
USLA Membership	\$30.00	15	\$450.00		\$450.00
Driver Training					
Uniforms			\$2,000.00		\$1,500.00
Shirts					
Shorts					
Hats					
Rain Gear/ Jacket					
Whistles/ Lanyards					
Patches					
Ladies' Suits					
Suits					
Drug Testing/ Background Check	\$90.00	15	\$1,350.00		\$1,350.00
Advertising/ Promotions (Recruiting)			\$500.00		\$500.00
Computer, Software & Accessories			\$2,500.00		\$800.00
Beach Signage			\$2,500.00		\$500.00
Beach Supplies					
Sunscreen			\$200.00		\$200.00
Cleaning Supplies			\$100.00		\$100.00
Maintenance & Repair					
Ongoing UTV Maintenance & Repair			\$400.00		\$400.00
Ongoing Lifeguard Tower Repairs			\$200.00		\$200.00
Ongoing Radio Maintenance			\$500.00		\$500.00
Ongoing PWC Maintenance			\$800.00		\$800.00
Misc. Equipment Repairs			\$200.00		\$200.00

Small Tools & Equipment					
Rope/ Cords			\$300.00		\$300.00
PWC Lube			\$32.00		\$32.00
Paint Brushes			\$25.00		\$25.00
PWC Poles			\$100.00		\$100.00
Hardware			\$200.00		\$200.00
Binoculars	\$50.00	6	\$300.00	2	\$100.00
Power/ Hand Tools			\$300.00		\$100.00
Buoys (Rescue Tubes)	\$50.00	20	\$1,000.00	5	\$250.00
Rescue Boards	\$925.00	5	\$4,625.00	1	\$925.00
Umbrella	\$200.00	2	\$400.00	1	\$200.00
Paint					\$400.00
Assorted Tools					\$100.00
Medical Supplies					
AED	\$1,200.00	1	\$1,200.00		\$300.00
AED Case	\$250.00	1	\$250.00		
Airway Bag	\$1,200.00	1	\$1,200.00		
Trauma Bag	\$200.00	1	\$200.00		\$50.00
Stokes Basket			\$300.00		\$100.00
Tower Kit Bag	\$30.00	4	\$120.00	1	\$30.00
First Aid Supplies			\$2,000.00		\$2,000.00
Backboards	\$200.00	4	\$800.00	1	\$200.00
Backboard Straps	\$40.00	8	\$320.00	2	\$80.00
Towers					
2-Person	\$30,000.00	2	\$60,000.00		
2 Person Tower Installation	\$10,000.00	2	\$20,000.00		
1-Person	\$12,000.00	1	\$12,000.00		
1 Person Tower installation	\$10,000.00	1	\$10,000.00		
Lifeguard chair	\$500.00	1	\$500.00		
Tower transportation	\$7,000.00	1	\$7,000.00		

Training Equipment					
USLA Manual	\$40.00	20	\$800.00	3	\$120.00
Medical Textbook	\$40.00	20	\$800.00	3	\$120.00
Medical Training Videos	\$50.00	2	\$100.00		
Surf Rescue DVDs	\$25.00	4	\$100.00		
AED Trainer					
Communications					
800 Mgz radios	\$2,700.00	3	\$8,100.00	1	\$2,700.00
VHF radios	\$150.00	10	\$1,500.00	2	\$300.00
Radio Bag	\$75.00	3	\$225.00	3	\$225.00
Personal watercraft (PWC)					
PWC			\$12,000.00		\$3,000.00
PWC sled			\$1,200.00		\$600.00
PWC outfitting			\$600.00		\$200.00
UTV					
UTV			\$15,000.00		\$3,000.00
UTV Outfitting			\$500.00		\$100.00
Fuel			\$12,000.00		\$12,000.00
Storage Container	?	?	?		
Chief's Vehicle	?	?	?		
Office-Turnout	?	?	?		
Cellphones	?	?	?		
Total expenses			\$190,197.00		\$36,357.00

	Startup costs	Recurring costs
Personnel	\$577,387.00	\$577,387.00
Training salaries	\$36,938.00	\$36,938.00
Equipment	\$190,197.00	\$36,357.00
TOTAL	\$804,522.00	\$650,682.00

Appendix III: Beachgoer Survey

Beachgoer Survey

We are a group of college students from Worcester Polytechnic Institute doing a social science project focused on beach safety and tourism. All of our results will be reported in aggregate and will anonymous.

Beach Name:

Risk Level of Beach: **Low** or **High**

Presence of Lifeguards: **Y** or **N**

Have you ever taken formal swimming lessons?

Yes

No

Choose the best that describes you:

- I do not know how to swim.
- I only feel comfortable swimming in pools.
- I am an intermediate swimmer in open-water (i.e. oceans, lakes, rivers).
- I am a highly skilled swimmer.
- I am a certified lifeguard.

How many years have you been swimming for?

Do you know what a rip current is? If so, do you know how to escape one?

Do you believe the surf at this beach is: (Circle one)

Extremely Safe

Safe

Average

Dangerous

Extremely Dangerous

Which best describes you? I think lifeguards are:

- extremely important for every beach.
- helpful, but not necessary.
- not useful or necessary
- I do not have an opinion.

Have you ever seen a lifeguard rescue a swimmer?

Yes

No

How much authority would you say a lifeguard holds? Please circle one.

- None
- Slight
- Moderate
- All beach authority
- Only when it directly pertains to saving lives

- I am unsure

What do you think about the amount of lifeguards at this beach?

- There is an appropriate amount.
- There should be more on duty.
- There are too many.
- I do not know.

How much would you feel comfortable paying per night for a hotel fee? Circle your answer.

\$0 \$1 \$2 \$3 \$4 \$5+

What method of payment would you prefer?

- Donation box
- Entrance fee
- Parking fee
- Hotel fee
- None
- Other:

Information Section:

- A drowning occurs **every twelve days** in Puerto Rico.
- Rip currents, dangerous rock structures, and rough waters are the leading causes of drownings.
- If each tourist paid a small fee each night of their vacation stay, the lifeguard program would be **more than fully funded**.
- A lifeguard could save many lives and reduce this statistic with this program.

Do these pieces of information change any of your answers?

Yes

No

And if so, which ones? Feel free to look back at your prior answers.

Demographics:

- a. Gender: **F** or **M**
- b. Age:
- c. Permanent Residence:
- d. Reason for travel:

Thanks for taking time to answer this survey! Please enjoy this sticker!

Appendix IV: Lifeguard Interview

Lifeguard Interview

Beach Name:
Address:
Interviewee Name (optional):
Title (optional):
Email (optional):
Phone number (optional):

1. Who is your employer?
2. What form of training do you have? Do you feel as though your training is adequate for your line of work?
3. What are your hours? Part time or full time?
4. Are you hired for the full year or is this a seasonal job for you?
5. How many lifeguards are on duty at a time? Do you feel that the beach is understaffed, overstaffed, or properly staffed?
6. What accidents do you most commonly see and what do you believe cause them?
7. What equipment do you use daily?
8. Is your beach in need of more efficient equipment?
9. Do you feel as though the public adheres to the rules of the beach? Explain.

Notes:

Appendix V: Lifeguard Management Interview
Beach Management Interview

Beach Name:
Address:
Interviewee Name (optional):
Title (optional):
Email (optional):
Phone number (optional):

-
1. Would you consider your beach high or low risk when it comes to safety (i.e. currents, high surf, etc.)?
 2. How did you go about hiring your lifeguards? What certifications and credentials do they need?
 3. How many lifeguards are currently employed under you? Do you consider your beach understaffed, overstaffed or properly staffed?
 4. What equipment do you provide your lifeguards and beach with?
 5. Do you feel as though more lifeguard training or better equipment is needed to enhance the quality of your beach?
 6. Do you find many incidents where the public fails to adhere to the beach rules as well as the warnings posted by the lifeguard staff? Is there any action taken for those who fail to adhere?
 7. In the case of a lawsuit, who takes the liability for your beach? In the past, have there been any issues with liability?

Notes:

Appendix VI: Hotel Management

Hotel Management Interview

Hotel Name:

Address:

Interviewee Name (optional):

Title (optional):

Email (optional):

Phone number (optional):

Would you like us to keep this information confidential?

-
1. How many guests do you have annually? Could you put a number to the amount of business travelers?
 2. Can you break down the nightly room rate? Which fees are applied?
 3. Based on the current drowning rate and the lack of governmental aid, our group has proposed a hotel fee that would pay for all aspects of the lifeguard program. Where do you stand on this matter?
 4. What is a price range in which you would feel comfortable with adding on to a room charge to support this program?
 5. Do you feel that this fee would be more appropriate in a per person or per room nightly rate?
 6. Do you foresee this fee being a deterrent to your hotel or to the island in general?
 7. What steps would be necessary to create a fee at your establishment?

Notes:

Appendix VII: Government Contact List

Source: Puerto Rico Sea Grant

NAME	AGENCY*	EMAIL	TELEPHONE	WEBSITES
Juan Figueroa	DRD	-	787-613-2276	www.drdpuertorico.com/
Ernesto Díaz	DNER	ediaz@drna.gobierno.pr	787-999-2200, x. 2722	http://www.drna.gobierno.pr/
Carolina Morales	Tourism Company	Carolina.Morales@tourism.pr.gov	787-721-2400, x. 2071/2021	http://puertoricotourism.pr.gov/dnn/Default.aspx
José Suarez	iHE Enterprise	jsuarez@i-h-e.com	787-529-0205	http://www.ihepr.com/
María E. Garcia (Private Sector)	Blue Flag	banderaazulpuertorico@gmail.com	787-407-5829	http://opaspuertorico.org/
Orlando Gonzalez	City Emergency	orgonzalez@sanjuanciudadpatria.com		
Roberto Valera	PRHTA	rvalera@prhta.org	787-758-8001	www.prhta.org/

*DNER: Department of Natural and Environmental Resources

iHE: International Hospitality Enterprise

PRHTA: Puerto Rico Hotel and Tourism Association

DRD: Sports and Recreation Department

Appendix VIII: Government Interview
Puerto Rican Government Interview

Agency Name:
Interviewee Name (optional):
Title (optional):
Email (optional):
Phone number (optional):
Would you like us to keep this information confidential?

Tell me about your experience while working for the Puerto Rican Government.

- How long you have been working for the government?
- In what sector or department are you affiliated with?
- Addition facts.

How willing is the government to enforce any type of fee in the country?

Any ideas on what kind of fees we can look into to support a program such as one for lifeguards?
Has the government ever funded or is currently funding a type of beach or water related program in Puerto Rico?

- What was/were the program(s)?
- What did/do these programs do or promote in Puerto Rico?
- What was the extent to how involved the government was with the program(s) and the funds?

I am interested in hearing your opinion about involving the government through funds or just support of our lifeguard program.

If hesitant:

- Is it the program or our proposal that you are uncertain of?

(If program:)

- Statistics that we found, our observations, surveys and interviews of the beachgoers, hotel guests, and hotel management.
- Why they would not want a lifeguard program?
- Do you know this could save lives as well as better the revenue and travel in Puerto Rico, on the beaches, and at hotels, just because of the positive turnaround a safe beach enacts in the eyes of tourists?

(If proposal:)

- Are there any critiques I could take back to my group members so we can discuss and revise our proposal to make it stronger?

- Would you be interested in scheduling a follow-up interview to look over our revised proposal?

If not hesitant:

- What would be the next necessary steps to implementing a fee? Is it possible for the government to enforce?

Notes:

Appendix IX: Gantt Chart

Objectives	Individual Tasks	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	
Objective 1: Survey beachgoers (beach safety, hotel fee, etc)	Observe	█				█			
	Get incentives	█							
	Survey game plan / site map	█							
	Survey		█	█					
	Compile responses				█				
	Interpret results						█		
Objective 3: Survey hotel guests & interview hotel management (hotel fee)	Observe	█				█			
	Survey game plan / site map	█							
	Survey		█	█					
	Compile responses				█				
	Interpret results						█		
Objective 2: Interview lifeguards (status of current programs, etc)	Speak with employers		█			█			
	Survey			█	█				
	Compile results				█				
	Interpret results						█		
Objective 4: Interview government organization contacts (enforce?)	Set up appointments	█				█			
	Interview contacts			█	█				
	Interpret results						█		
Objective 5: Determine source of funds & report back	Analysis of total results				█	█			
	Funding solution created				█				
	Prepare presentation of recommendation				█		█		
	Report back to sponsor, hotels, & other							█	
Objective 6: Consider social implications	Analysis of total results				█	█			
	Analysis of funding solution				█				
Other	Draft paper					█			
	Edit paper						█		
	Practice presentation							█	
	Flexible time							█	

Appendix X: Survey Responses

Have you taken swimming lessons? - All

Yes 61
No 37
No answer 3

Do you know what a rip current is? - All

Yes 69
No 29
No answer 3

Do you know how to escape a rip current? - All

Yes 35
No 66

Level of Swimming - All

I do not know how to swim 10
Pools only 17
Intermediate 50
Highly Skilled 16
Lifeguard 8

Safety of beach - All

Extremely Safe 1
Safe 20
Average 43
Dangerous 25
Average/Dangerous 2
Extremely Dangerous 8
Depends 1
Don't know 1

Importance of Lifeguards - All

Extremely important 73
Helpful, not necessary 16
Not useful 1
No opinion 3
No answer 8

How much authority should a lifeguard have? - All

All beach authority 40
Moderate 39
Only when it pertains to saving lives 11
Slight 2

Unsure 9

Have you ever seen a rescue? - All

Yes 55

No 46

How do you feel about the amount of lifeguards? - All

More on duty 51

Appropriate amount 19

Too many 4

I do not know 18

No lifeguards 9

Preferred Fee - All

0 6

1 6

2 12

3 15

4 8

5+ 54

What is your preferred payment method? - All

Donation Box 13

Entrance Fee 12

Hotel Fee 60

Parking Fee 6

Donation Box or Hotel Fee 2

None 4

Any option is fine 1

No answer 2

Reason for Travel - All

Business 5

Leisure 65

Business/Leisure 3

Resident 25

No answer 3

Have you taken swimming lessons? - Condado

Yes 22

No 11

No answer 2

Level of Swimming - Condado

I do not know how to swim 3

Pools only 7

Intermediate 15
Highly Skilled 6
Lifeguard 4

Do you know what a rip current is? - Condado

Yes 28
No 6
No answer 1

Do you know how to escape a rip current? - Condado

Yes 14
No 21

Safety of beach - Condado

Extremely Safe 0
Safe 1
Average 11
Dangerous 15
Average/Dangerous 0
Extremely Dangerous 7
Depends 1

Importance of Lifeguards - Condado

Extremely important 30
Helpful, not necessary 4
Not useful 0
No opinion 0
No answer 1

Have you ever seen a rescue? - Condado

Yes 21
No 14

How much authority should a lifeguard have? - Condado

All beach authority 15
Moderate 15
Only when it pertains to saving lives 3
Slight 0
Unsure 2

How do you feel about the amount of lifeguards? - Condado

More on duty 22
Appropriate amount 3
Too many 1
I do not know 4
No lifeguards 5

Preferred Fee - Condado

0	1
1	1
2	4
3	6
4	1
5+	22

What is your preferred payment method? - Condado

Donation Box	3
Entrance Fee	3
Hotel Fee	25
Parking Fee	1
Donation Box or Hotel Fee	1
None	0
Any option is fine	1
No answer	1

Reason for Travel - Condado

Business	1
Leisure	28
Business/Leisure	1
Resident	4
No answer	1

Appendix XI: Luquillo Lifeguard Interview

Lifeguard Interview

Date: 11/5/2015

Beach Name: Luquillo Beach, Blue Flag

Interviewee Name (optional): Did not receive, did not speak English

Title (optional): teaches too

1. Who is your employer? Blue Flag
2. What form of training do you have? Do you feel as though your training is adequate for your line of work? USLA, Red Cross, teaches also; 20 years of service
3. What are your hours? Part time or full time? 8am-5pm
4. How much do you get paid, if you're comfortable sharing and is it adequate? \$2,100 (\$25,200) with benefits; satisfied
5. Are you hired for the full year or is this a seasonal job for you? Full year
6. How many lifeguards are on duty at a time? Do you feel that the beach is understaffed, overstaffed, or properly staffed? 1-4 lifeguards depending on season; properly staffed; fairly safe beach
7. What accidents do you most commonly see and what do you believe causes them? Entire time there has seen 4-5 rescues
8. What equipment do you use daily? Floatation device
9. Is your beach in need of more efficient equipment? *Forgot to ask*
10. Do you feel as though the public adheres to the rules of the beach? Explain. Yes, 90% of people respect him.

Notes

- This beach was much safer than the ones we are surveying

Appendix XII: Seven Seas Lifeguard Interview

Lifeguard Interview

Date: 11/5/2015

Beach Name: Seven Seas

Address: Fajardo

1. Who is your employer? Blue Flag
2. What form of training do you have? Do you feel as though your training is adequate for your line of work? Some sort of training we don't know; ~15 years
3. What are your hours? Part time or full time? 8-5pm not busy, 8:30-6pm busy
4. How much do you get paid, if you're comfortable sharing and is it adequate? Very comfortable
5. Are you hired for the full year or is this a seasonal job for you? Full year
6. How many lifeguards are on duty at a time? Do you feel that the beach is understaffed, overstaffed, or properly staffed? 1-6 lifeguards; properly staffed; extremely safe beach; in the bay
7. What accidents do you most commonly see and what do you believe causes them? Some rescues; no drownings; deaths due to other causes
8. What equipment do you use daily? More equipment than Luquillo, ATVs, stretcher, boards (that we tested)
9. Is your beach in need of more efficient equipment? Adequate equipment
10. Do you feel as though the public adheres to the rules of the beach? Explain. *Forgot to ask*

Notes

- A super safe beach; not dangerous in the least

Appendix XIII: Escambrón Lifeguard Interview

Lifeguard Interview

Date: 11/09/15

Beach Name: Escambrón

Interviewee Name (optional): Two lifeguards

1. Who is your employer? Hired by the County; Blue Flag beach
2. What form of training do you have? Do you feel as though your training is adequate for your line of work? Red Cross (w/o open-water) or YMCA. Red Cross gives a good introduction into being a lifeguard. There is also open-water, CPR, First-Aid, and administering Oxygen training/certification. They are in charge of paying for their own training. Some lifeguards cannot afford some of the trainings. Would definitely recommend more.
3. What are your hours? Part time or full time? Full time. Always a lifeguard on duty from 8:30 am to 5:30 pm. On Tuesdays the hours are 6:00 am to 11:00 pm. This includes holidays. Weekends have 2 lifeguards. Summer season there is 4.
4. How much do you get paid, if you're comfortable sharing and is it adequate? Carolina Beach lifeguards only get paid \$8/Hr. The government does not financially help or respect the organization. Lifeguards are responsible to purchasing their license, uniforms, equipment.
5. Are you hired for the full year or is this a seasonal job for you? Full year. The staff remains the same. More hours are given during the summer (approx. 110 hours each).
6. How many lifeguards are on duty at a time? Do you feel that the beach is understaffed, overstaffed, or properly staffed? Only 1 during the off season, except for weekends (then there are 2). During the summer there are two lifeguards at each tower (4 total). The total amount of lifeguards hired is 5.
7. What accidents do you most commonly see and what do you believe causes them? Not a lot of accidents occur, but when they do it's due to intoxication or uneducated beachgoers. Much common incident reported to lifeguards are missing children. There have also been rock injuries and jellyfish stings.
8. What equipment do you use daily? Don't have proper equipment. No rescue board or full oxygen tanks. They have a stretcher, but doesn't have straps. They have a broken down wheelchair. They have a first-aid kit and stabilizers for broken bones. Towers are also not in good shape. Homeless people will get into them at night. Supervisor does all of the fixes by himself.
9. Is your beach in need of more efficient equipment? Rescue boards would lead to faster rescues and they would need straps for the stretcher if there were any spinal injuries. The towers need to be fixed so they can be completely closed up at night. They have homeless people sleeping in them. The towers are not groomed or cleaned unless the lifeguards do it

themselves. If there is something that needs to be fixed, they have to do it themselves. The government will not help with any repairs.

10. Do you feel as though the public adheres to the rules of the beach? Explain. No. They do not feel they are respected or taken seriously by both the people and the government.

Notes:

- Feel that the training to be a certified lifeguard should be more elaborate and taken more seriously.
- It is a Blue Flag Beach.
- Overall they love their job.

Appendix XIV: Sports and Recreation Department Interview

Sports and Rec Interview

Agency Name: Sports and Recreation Department

Interviewee Name: Juan Figueroa

Title (optional): Sub-secretary

Red Cross and USLA standards – in charge of life saving

Talk about ourselves. Talk about the project.

1. How long you have been working for the Sports and Recreation Department? 14 months in junction
2. In what sector or department are you affiliated with?
National Parks organization, now within the department
Certificate physical trainers and coaches, etc.
Junction with life-saver, practical part of it
3. Has the Sports and Rec ever funded or is currently funding a type of beach or water related program in Puerto Rico?
 - a. What was/were the program(s)? Blue Flag program, Tourism Company gives them money, gave responsibility to Sports and Rec
 - b. What did/do these programs do or promote in Puerto Rico? Sports and Rec runs the beaches according to Blue Flag (4 beaches now) – but more focused on the actual water quality, safety, lifeguarding, and environment
Blue Flag beaches have lifeguards
Condado does not have lifeguards, only one, small one
 - c. What was the extent to how involved the government was with the program(s) and the funds? Tourism Company
4. Any ideas on the kind of funding you think we could look into to support a program such as one for lifeguards?
Hotels already have a lot of fees; rooms are very expensive
Fees: Tourism, Treasury... there is a formula *ask Chapa about formula*
Go see Blue Flag beaches - *ask Chapa more about Blue Flag*
Send someone in a car to take us to Vieques Ferry and Luquillo and some other place and some other place
5. I am interested in hearing your opinion about involving the government through funds or just support of our lifeguard program.

We just have to start with something – great study.
Data to change this formula, and make people feel secure.
6. What do you believe would be the next necessary steps to acquiring funds? Is it possible for the government to enforce this?

7. How to approach the next step? Talk to the Tourism Company about the formula and Blue Flag. Actually talking to Blue Flag isn't as important.

Notes

- “Window of the Sea”
- Beach and shopping center
- 45-60 years old to do exercise
- To go see, much different

Appendix XV: Visitors and Expenditure of the Fiscal Year 2000-2014

Source: Puerto Rico Tourism Company

Visitors and Their Expenditures														
Fiscal Year														
	2000-01	2001-02	2002-03	2003-04	2005-05	2005-06	2006-07	2007-08	2008-09r	2009-10	2010-11r	2011-12r	2012-13r	2013-14p
TOTAL VISITORS	4,907,753	4,364,061	4,402,345	4,889,162	5,072,842	5,022,120	5,062,406	5,213,099	4,415,262	4,379,155	4,213,673	4,196,929	4,237,700	4,455,201
Regular Visitors	3,551,196	3,087,096	3,238,408	3,540,999	3,685,917	3,722,005	3,686,973	3,716,246	3,183,252	3,185,606	3,047,915	3,069,087	3,199,700	3,246,005
In hotels 1/	1,186,775	1,147,778	1,239,243	1,307,022	1,361,643	1,424,166	1,353,376	1,342,810	1,277,749	1,349,449	1,408,536	1,507,984	1,586,100	1,633,249
In other places 2/	2,364,421	1,939,318	1,999,165	2,233,977	2,324,274	2,297,839	2,333,597	2,373,436	1,905,503	1,836,157	1,639,379	1,561,103	1,613,600	1,612,756
Special Visitors 3/	1,356,557	1,276,965	1,163,937	1,348,163	1,386,925	1,300,115	1,375,433	1,496,853	1,232,010	1,193,549	1,165,758	1,127,842	1,038,000	1,209,196
TOTAL EXPENDITURES*	\$2,728,111	\$2,486,424	\$2,676,625	\$3,024,069	\$3,238,555	\$3,369,270	\$3,413,919	\$3,534,963	\$3,175,764	\$3,210,738	\$3,142,798	\$3,192,884	\$3,333,500	\$3,438,085
Regular Expenditures*	\$2,596,461	\$2,357,344	\$2,549,425	\$2,870,069	\$3,071,445	\$3,208,390	\$3,241,719	\$3,340,613	\$3,002,081	\$3,039,351	\$2,973,457	\$3,025,202	\$3,177,600	\$3,255,910
In hotels 1/*	\$1,167,529	\$1,132,366	\$1,236,093	\$1,334,089	\$1,428,361	\$1,537,668	\$1,501,583	\$1,526,267	\$1,464,387	\$1,541,792	\$1,618,929	\$1,706,926	\$1,811,800	\$1,872,264
In other places 2/*	\$1,428,932	\$1,224,978	\$1,313,332	\$1,535,980	\$1,643,084	\$1,670,722	\$1,740,136	\$1,814,346	\$1,537,694	\$1,497,559	\$1,354,528	\$1,318,276	\$1,365,800	\$1,383,646
Special Visitors 3/*	\$131,650	\$129,080	\$127,200	\$154,000	\$167,110	\$160,880	\$172,200	\$194,350	\$173,683	\$171,387	\$169,341	\$167,682	\$156,000	\$182,175
* In Thousands														
1/ Includes Paradores														
2/ Includes Guest Houses														
3/ Visitors on cruise ships and transient military personnel														
p=preliminary figures														
r=revised figures														
Source: Puerto Rico Planning Board														

Appendix XVI: Tourism Company Interview

Puerto Rican Tourism Interview

Agency Name: Puerto Rico Tourism Company

Interviewee Name (optional): Carolina Morales

Title (optional): Sustainable Tourism Development Officer

Email (optional): carolina.morales@tourism.pr.gov

Phone number (optional): 787-721-2400

Our project is to determine a feasible way to fund a lifeguard program in the Condado neighborhood to mitigate the drowning rate. We hope to implement a small beach fee on hotels' room rates to provide adequate funds for the program.

Tell me about your experience while working for the Puerto Rican Tourism Company.

1. How long you have been working for the company? 9 years
2. In what sector or department are you affiliated with? Sustainable Tourism Division at the Planning and Development Office
3. About how much income do tourists bring in to Puerto Rico each year? The information we can provide is their expenditure, see document attached.
4. We were told how there is a "formula" for the tax that hotels and resorts must include on their room charges. Would you be able to tell us the breakdown of this formula? Waiting for follow-up on Thursday. 80% revenues goes to promotion of the island. Unsure about reallocation of these moneys – probably all used.
5. What type of fees would you suggest that we look into to support a program such as one for lifeguards? No more taxes on tourists. Government always says no. I suggest that you look into municipal and federal funding.
6. Has the Tourism Company ever funded or is currently funding a type of beach or water related program in Puerto Rico? Could you provide some additional information below, if so? PRTC provides financial and technical support to the Blue Flag Program, which certifies beaches and marinas in compliance with the following criteria: environmental education and information, water quality, environmental management and safety and services. At present, Puerto Rico has seven (7) beaches and two (2) marinas certified under the Blue Flag Program.
7. What was/were the program(s)? Blue Beach / Bandera Azul
8. What did/do these programs do or promote in Puerto Rico? Criteria for Blue Flag: <http://www.blueflag.org/menu/criteria>

9. What was the extent to how involved the company was with the program(s) and the funds?
They fund it.
10. We are interested in hearing your opinion about whether or not the Tourism Company would be able to get involved in this project either through funds or other support. We also would like to hear your thought on our idea of involving the hotels in the funding of this program.

She essentially thinks the funding is impossible but is willing to help our efforts. Forgot to ask about a follow-up meeting. We thinks it's difficult to say if a hotel fee would work because a lot of these fee moneys are hard to keep track of (who collects the money? Secretary of Treasury). Talk to Hotel and Tourism Association (PRHTA – info on interview sheet).

Notes

- Contact Blue Flag on how they add beaches to their program. Maria from OPAS
- Members of the Puerto Rico Interagency Beach Management Board.
- Also look into Beach Board Interagency within DNER. Ernesto Diaz is a great contact.

Appendix XVII: La Concha Interview

LA CONCHA HOTEL MANAGEMENT INTERVIEW

We have 95-100% occupancy daily. 483 rooms.

The hotel is geared towards business. 85% business. Marriott Property Renaissance hotel. Not many locals. The amount of locals depends on the seasons. Expect more leisure because of Christmas. More business than pleasure during the whole year.

11% government tax. 18% resort fee for Wifi, towels usage, pool being 24 hours, chairs on the beach and pool, business center stuff = AMENDITIES.

No contact with Sea Grant. Beach is a "very very dangerous" public beach. Franchise of the Marriott, IHE represent the hotel. They cannot implement the fee with the name of the hotel. Have to implement the fee with the iHE name.

Fees they collect are per night (so the 18% and government 11%). Have third party that make reservations for guest where the hotel fees are already paid and the hotel has to pay them for their service. If the room is booked with the hotel the taxes would be paid.

Appendix XVIII: International Hospitality Enterprise Interview

International Hotel Enterprise Interview

Date: 11/11/2015

Address: Ashford Avenue

Interviewee Name: Jose Suarez

Title: President of iHE

Email: Contacting Alexandra Wong

Introduce ourselves; describe project; ask for an introduction from him

1. What prior efforts have been put into a lifeguard program?
Private sectors pay; San Juan Marriott is getting a new Chinese owner.
Quietly started a lifeguard program (only one at La Concha; dressed as a pool attendant) – successful; it works – others will definitely follow
2. What did and did not work?
Issues convincing people to help pay for this
USLA wants the full blown version (Chapa's vision) – too expensive
Private sector can pay for most of it; face is the government
Willing to pay for towers, lifeguards, labor, only in front of the hotels – 100%
Fee would put hotels at competitive disadvantage. Not at a good place financially.
3. How many guests do these hotels have annually? Could you put a number to the amount of business travelers?
La Concha – $483 * 365 * 90\% = 158,000 * 1.7 = 270,000$ guests per year (130-160 Vanderbilt). 400,000 total between two hotels. La Concha is mainly business travelers.
4. Can you break down the nightly room rate? Which fees are applied?
Amenities, etc. resort fees; taxes
5. Do you know the breakdown of where the fees and taxes go towards?
To be continued; Tourism Company

Need to talk to the Condado Marriott; undergoing new ownership; Jose Gonzalez? (got here 2 weeks ago); Frederico Sanchez (Interlink group); Peirido Revera (director of security)
6. Why are you thinking to join or not to join?
It will make them reconsider if this is in the works.
7. Based on the current drowning rate and the lack of governmental aid, our group has proposed a hotel fee that would pay for all aspects of the lifeguard program. Where do you stand on this matter?
Definitely wants this! But not a fee, will pay for it
8. Do you think this is plausible through another added on fee or reallocated money already being collected?
The money is quite tight. To offset charges to hotel.

9. Do you believe other hotels not under this association would follow if the iHE took on another fee or reallocated fee money to a lifeguard program?
Yes, he thinks they will.
10. We have surveyed beachgoers but we'd also like to survey hotel guests. What would be the best way to gain feedback from your guests? Could we give them to the hotel front desk to randomly give to people checking in or could we spend a bit of time in the lobby speaking to guests?
Suggested talking to beachgoers
11. Do you have any other contacts of other hotels in the area that we could reach out to?
Blackstone, Marriott (see above); see card for contact information
12. Would you be interested in a follow-up meeting? We are here until December 17th.
Sure! Thank you!

Notes:

- iHE is the largest hotel enterprise
- Second largest is Black Stone, investment firm, hedge firm – not as personal; could try to get in touch, but not much dangerous beach aspect
- See card for contact information on Interlink group – part owner and asset managers.
Fede@interlinkpr.com
787-754-0610
Gloria Williams (Interlink Group)

Appendix XIX: OPAS Interview

OPAS Interview

Date: 11/23/2015

(Organization Pro Ambiente Sustentable)

Interviewee Name (optional): Maria

Title (optional): Executive Director and National Blue Flag Coordinator
(only 2 employees)

Blue Flag was a European program. Brought to the Caribbean. – DR, Jamaica, PR, and another Escambrón

was a Blue Flag pilot beach. 2004 got a flag. 2010 taken away. 2013 got it again.
They have a website. Needs to be updated.

1. Could you explain exactly what OPAS aims to do?

Blue Flag, Eco-School, Green Key, YRE

Reef Check International – runs from Blue Flag funds (Tourism Company)

Law 63 – proper beach management is Blue Flag (2000)

Sea Grant is part of this committee (for education)

Supposed to promote Blue Flag (no one is except for Tourism Company)

2. What is the process when a beach becomes Blue Flag?

Approach beach or approach Blue Flag, either way

Initial water test – may require a lot of work – needs a certain water quality

Work has to be done by the administrator

Blue Flag is just a certification – no funding (only \$40,000 a year for Blue Flag)

3. How did you go about hiring your lifeguards? What certifications and credentials do they need?

USLA – all lifeguards are certified

Some employed by DRD – different association

In DRD, lifeguards do not have to pay for trainings and certifications

At Escambrón (municipality), lifeguards have to pay for their own

DRD used to be at Escambrón, but were downsized.

Parks and Recreation is now only a program within DRD now

4. How many lifeguards are currently employed? Do you consider your beach understaffed, overstaffed or properly staffed?

Do not have that number. 5 at Escambrón. Luquillo has 5-7 (and summer hire more).

Carolina is Blue Flag also (what company hires lifeguards?).

5. What equipment do you provide your lifeguards and beach with?

Not an expert on the equipment. Berliz is creating a document for Maria to use as a checklist for the equipment. Floatation device, stretcher board, first aid kit, certification cards, mouthpiece, other medical devices.

If are missing something, get a warning and follow-up (dependent on severity of issue).

6. Do you feel as though more lifeguard training or better equipment is needed to enhance the quality of your beaches?

Department of Parks and Recreation gives her trouble; they lost a beach – not enough lifeguards or equipment; serious issues – drowning occurred; trying to get Flag back.

Beaches run by Parks and Recreation need to shape up.

Risk assessments occur in the beginning of the beach analysis

7. Do you find many incidents where the public fails to adhere to the beach rules as well as the warnings posted by the lifeguard staff? Is there any action taken for those who fail to adhere?

People do not read the signs or notice the flags. Lifeguards whistle. Children are not allowed to have arm floaties. Puerto Ricans get angry – not a lot of resident respect.

Water quality posted, but no one checks: they swim in contaminated water.

8. In the case of a lawsuit, who takes the liability for your beach? In the past, have there been any issues with liability?

Municipality or DRD (whoever runs the beach)

There has been lots of controversy regarding this though.

Palomino had a drowning, but now going for Blue Flag and have a lifeguard.

Notes:

- Concerning the underwater rock structure in Condado:
- Jack Crosseau Foundation, oceanographer
- Coral reef farm
- Water quality – how to make better?
- Gets checked every two weeks
- Determine if safe for “bathers” or “sleepers”
- Water company not in compliance; hundreds of fees; hard to fix; don’t care
- Rincon has awful water quality; swimmers and surfers are always sick
- No way could Condado become a Blue Flag beach:
- Beach is no classified as safe for swimmers.
- Hotels are afraid of the liability issue – acknowledging their responsibility.
- She does not see the issue of Condado beach ever truly being solved.

Appendix XX: DNER Interview

DNER Interview

Interviewee Name: Ernesto Diaz (Assistant: Nora Viera)

Title: Director of Puerto Rico Coastal Management; Executive Secretary for the beach management board

Introductions. Description of our project.

Lawsuit on tax? Suggestion to make it voluntarily

Website to see hotel locations – better visual to show target hotels (caribbean-mp.org)

He sees PREMA or something similar (State Emergency Management) taking this project over.

Municipality of San Juan

Four main: PRHTA, State of Emergency Management, DNER, Tourism Company

1. Tell me about your experience while working for the Puerto Rican Government.
Scientific research; coastal management; environmental quality; etc.
His department is more related to public and private uses with coastal environment protection
2. How long you have been working for the government? 20 years
3. In what sector or department are you affiliated with? Already mentioned above
4. How willing is the government to enforce any type of fee in the country?
Yes, plausible – must talk to **PRHTA**, Roberto V (have the information on fee breakdown)
5. Any ideas on what kind of fees we can look into to support a program such as one for lifeguards?
Hotels should pay, some percentage of their revenues
Definitely a volunteer hotel fee on the tourist (someday enforced; not in the beginning)
6. Has the DNER ever funded or is currently funding a type of beach or water related program in Puerto Rico? Not with lifeguards (lifesavers; connotations)
 - a. What was/were the program(s)? They do more educational program; preventive
 - b. What did/do these programs do or promote in Puerto Rico?
To make beachgoers responsible users of these dangerous beaches
Must have to pay avid attention to the changing beach conditions; very variable on PR
There are apps; people do not use them
 - c. What was the extent to how involved the government was with the program(s) and the funds? They run them; through many different departments and sectors; very focused on educating and preventing rather than the action of saving people

HIS IDEA: all flights coming into Puerto Rico show a beach video with precautionary advice on beach conditions (apps, front desk, which beaches to go to, where there are lifeguards); PREVENTIVE (recommend this video to Chapa – another project?; our part would be a safety brochure as a preliminary)

7. I am interested in hearing your opinion about involving the government through funds or just support of our lifeguard program.

Voluntary hotel fee is his #1; percentage of private sector hotel revenue (maybe for startup); percentage of government allocated room tax (PRHTA)

Do not use the word tax (contribution, donation, lifesaving, support, etc.)

Donation boxes are difficult; do donation within hotel charge (set auto check to Yes)

If not hesitant:

8. What would be the next necessary steps to implementing a fee? Is it possible for the government to enforce?

See main four suggested contacts to gather the rest of this information. Stick to recommendations; gets way to complicated.

9. Would you be interested in scheduling a follow-up interview to hear about our final recommendation? Send an email to Ernesto for Friday the 11th Final presentation. Also willing to hear our preliminary recommendations to give us pros and cons on the ideas.

Appendix XXI: PRHTA Interview

Puerto Rican Tourism Company Interview

Interviewee Name: Roberto Varela

Title: Director of Government Affairs

Email (optional): rvarela@prhta.org

Phone number (optional): 787-758-8001

Our project is to determine a feasible way to fund a lifeguard program in the Condado neighborhood to mitigate the drowning rate. We hope to implement a small beach fee on hotels' room rates to provide adequate funds for the program.

Introduction of us and our project.

Tell me about your experience while working for the PRHTA.

* How long you have been working for the company?

Unknown

* In what sector or department are you affiliated with?

Works under many committees

About the break-down formula of the hotel/resort tax?

Will be sending the formula to us via email.

What type of fees would you suggest that we look into to support a program such as one for lifeguards?

- Looking into Casino (Chance Games) funds – Tourism Company runs this. Money goes to treasury department and disappears (\$25M). Direct the money directly to the lifeguard program. Amend the Chance Games Law to fund the program.
- Chance Games vs. Voluntary
- Definite vs. Unsure
- Need legislation! – to get the chance games money
- Most will go to the Tourism Company for island promotion
- When money goes to treasury – don't know where it ends up
- Money used to go straight to the treasury; lobbied for the legislation; money goes to the Tourism Company – they have an invested interest
- Room tax money may be being used for something else
- Who would collect the money? It's automatic – possibly go through the Tourism Company?
- Would this new money have to go through the Tourism Company?
- DRD? Recreation and Parks?
- Need the support

Has the PRHTA ever funded or is currently funding a type of beach or water related program in Puerto Rico? Could you provide some additional information below, if so?

Rio Grande has some pilot lifeguard program also

* What was/were the program(s)?

No

* What did/do these programs do or promote in Puerto Rico?

N/A

* What was the extent to how involved the company was with the program(s) and the funds?

N/A

Animal example to implement a fee, was voluntary, eventually became just a suggestion to directly donate to the organization.

We are interested in hearing your opinion about whether or not the PRHTA would be able to get involved in this project either through funds or other support. We also would like to hear your thought on our idea of involving the hotels in the funding of this program.

- PRHTA can only suggest a hotel fee; cannot enforce
- Support from other organizations creates momentum to make lobbying the legislation easier

If hesitant:

* I am curious to why you are hesitant. Is it the program or our proposal that you are uncertain of?

Don't want to start a negative trend (using hotels to get the government money).

Opens the doors for other unnecessary fees.

Needs STRICT criteria. Money has to serve a purpose.

If not hesitant:

* What would be the next necessary steps to implementing a fee? Is it possible for the government to enforce?

Responded well to the voluntary fee to an outside body option and towards the positive responses from the residents

Create a whole new entity to control the funds

Notes:

- Use presentation to show board of hotels
- Send him the presentation
- PRHTA only can suggest an idea (such as a voluntary fee) to the hotel board, not enforce
- Believes larger hotels would agree and the smaller properties would be hesitant
- "What you show me is amazing"
- Chapa could present our information later to the PRHTA Board

Appendix XXII: City of San Juan Emergency Management City Emergency Interview

Agency Name: City Emergency

Interviewee Name: Orlando

Title: Secretary of Director - Emergency Management for the **City** Office (municipal- within State Office)

Email:

Phone number: n/a

Introduce ourselves and our project.

Tell us about his experience while working for the City Emergency department.

- How long you have been working for them?
Started September 15
- In what sector or department are you affiliated with?
Unanswered
- What does your job consist of?
Unanswered

Has the City ever funded or is currently funding a type of beach or water related program in Puerto Rico?

Not in San Juan that he knows of.

- What was/were the program(s)? N/A
- What did/do these programs do or promote in Puerto Rico? N/A
- What was the extent to how involved the government was with the program(s) and the funds? N/A

What is your protocol for any beach emergency? What is your involvement? Aquatic rescues with boats; "recovery" of bodies

What type of beach emergencies get reported to you? Do you have recorded numbers of any of these incidents? Mainly community located on the water line due to water erosion. Tsunami ready – flooding problems. Does not have a record of these number on him.

Do you have any ideas on what kind of funding we can look into to support a program such as one for lifeguards? Unsure

How we can enforce this fee or other form of funding?

They do not enforce. Very strong justification in order to get funding from city.

How can you help us in the continuation of this project?

Suggests other locations for project. Many other places would work better because they do not own this sand. Lifeguard program could encourage dangerous activities. Chapa should work with them. Who would build the towers? Need to get bids (out of our scope).

Where do you think we should go next with the data we have collected and for recommendations for the Sea Grant? Would have to be persuaded by our presentation to know anymore. Considered about the budget many. Needs extreme details. The city administration might be the next useful contact to see if program can make it that far (involving Suarez).

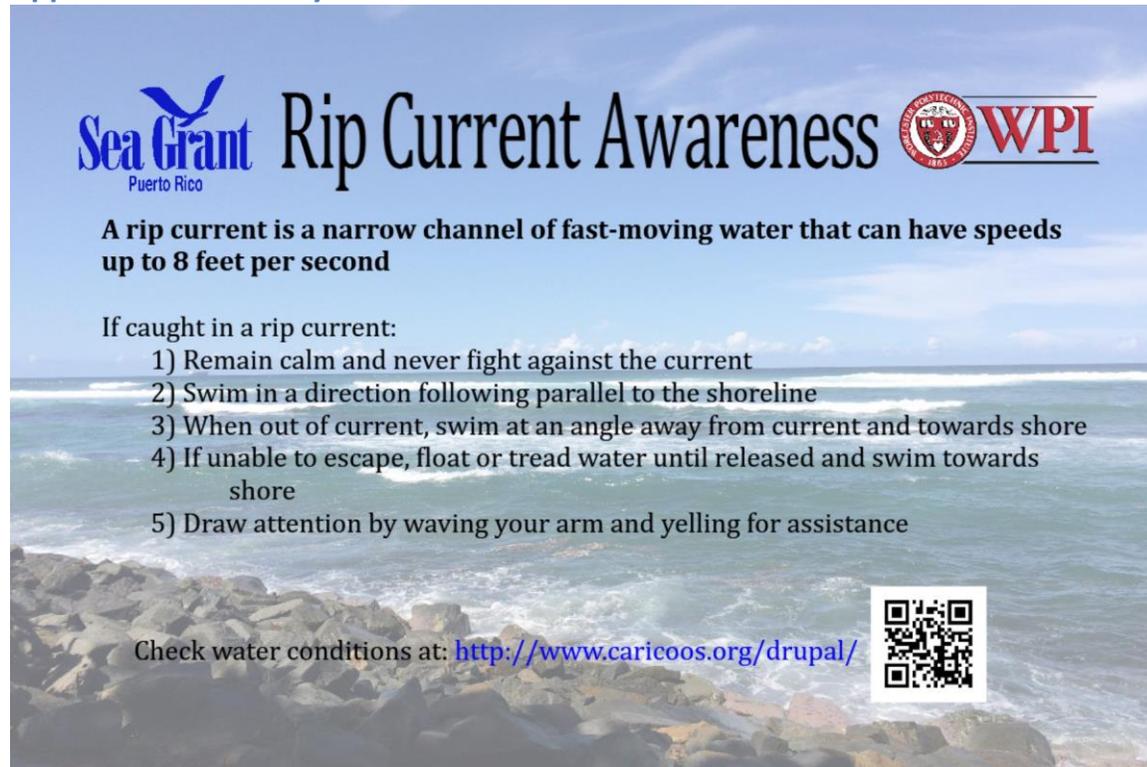
About Condado:

Awful beach; dangerous; lots of death; not a good piece of beach
They do not own Condado Beach
Claims Carolina is a Blue Flag beach (who knew)
Friends of the sea
Would create employment (buzzword)
Wants the images – a little out of our scope; regarding towers placement and where the strip of beach is that we're working on
Wants to show his boss to get a continuation yes or no. He likes it.

Send a follow-up email:

Budgets
Presentation?
Paper?
Chapa info
Name/Title
Number
Email
Location

Appendix XXIII: Safety Handout



Sea Grant
Puerto Rico

Rip Current Awareness

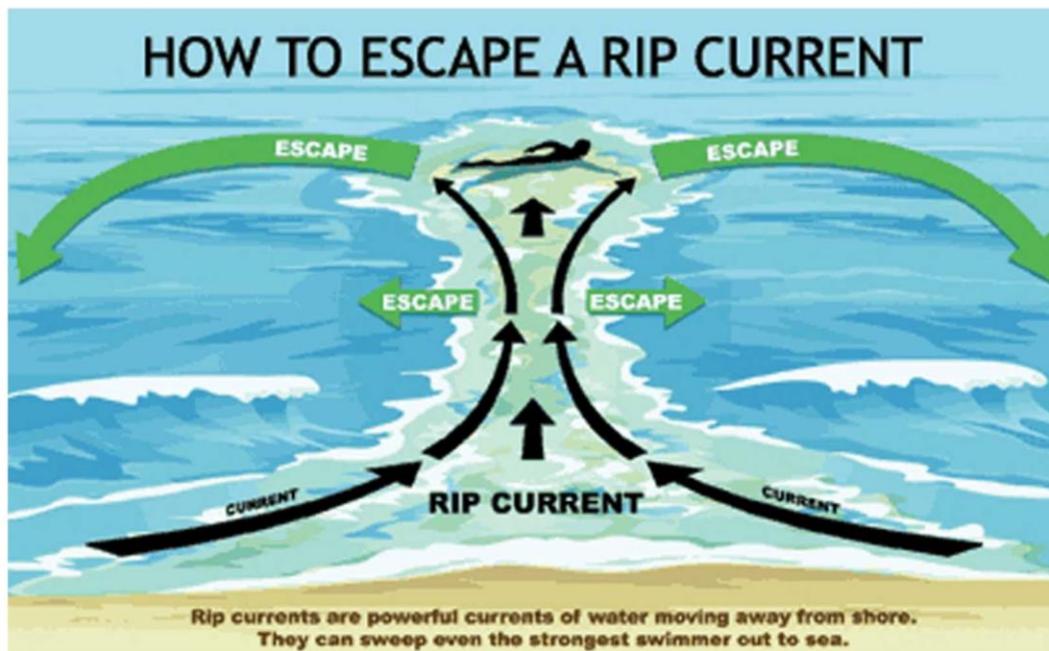
WPI

A rip current is a narrow channel of fast-moving water that can have speeds up to 8 feet per second

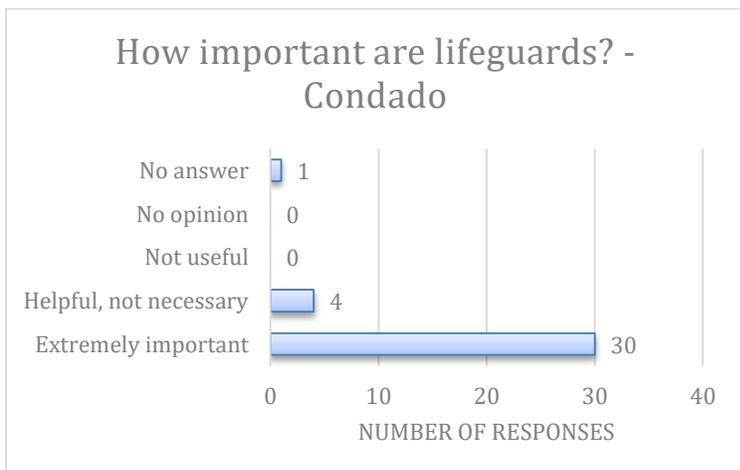
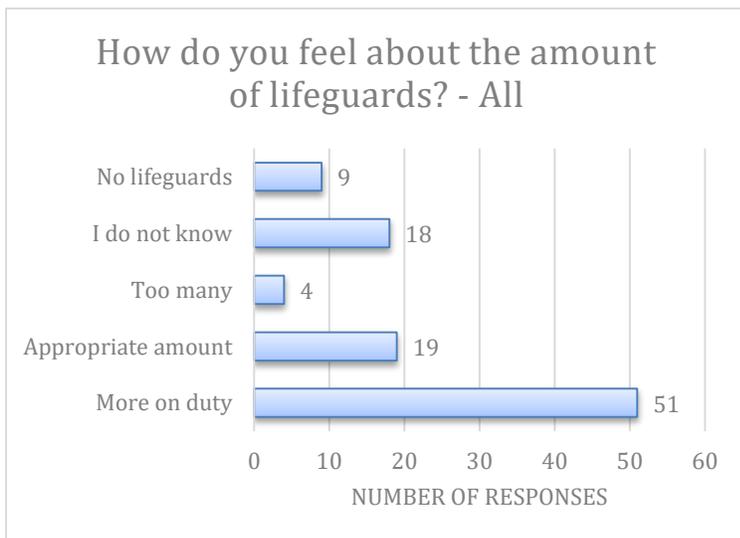
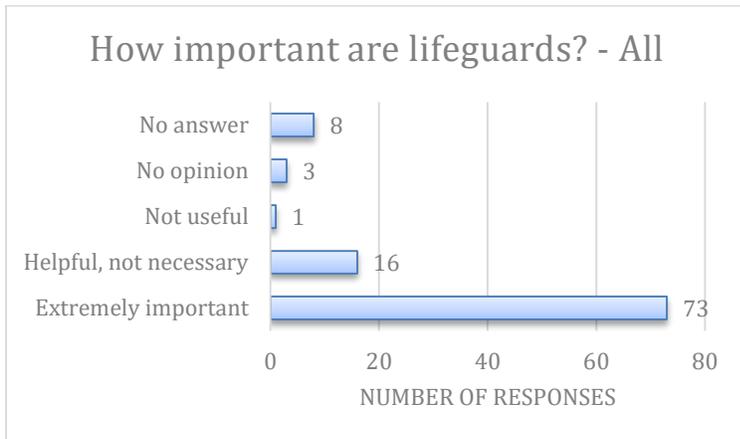
If caught in a rip current:

- 1) Remain calm and never fight against the current
- 2) Swim in a direction following parallel to the shoreline
- 3) When out of current, swim at an angle away from current and towards shore
- 4) If unable to escape, float or tread water until released and swim towards shore
- 5) Draw attention by waving your arm and yelling for assistance

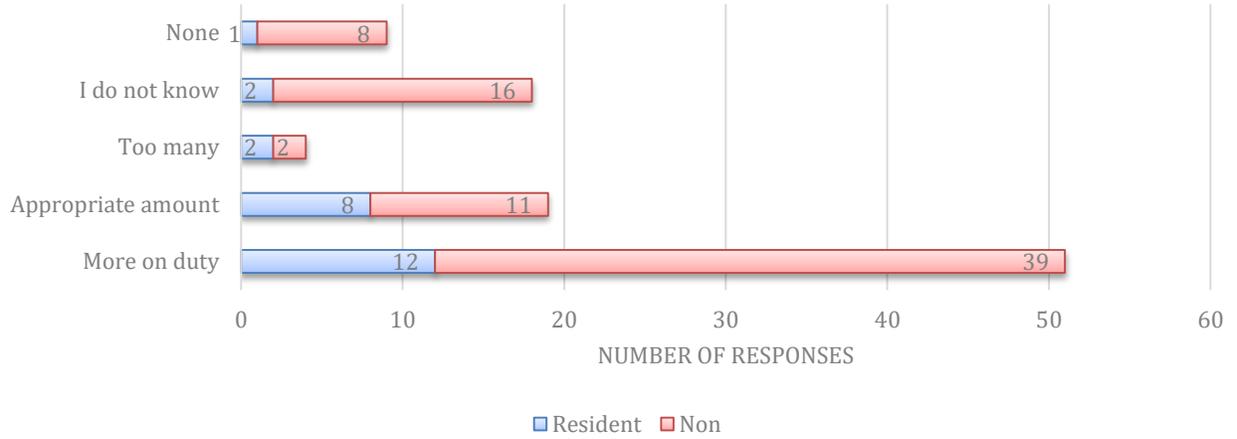
Check water conditions at: <http://www.caricoos.org/drupal/>



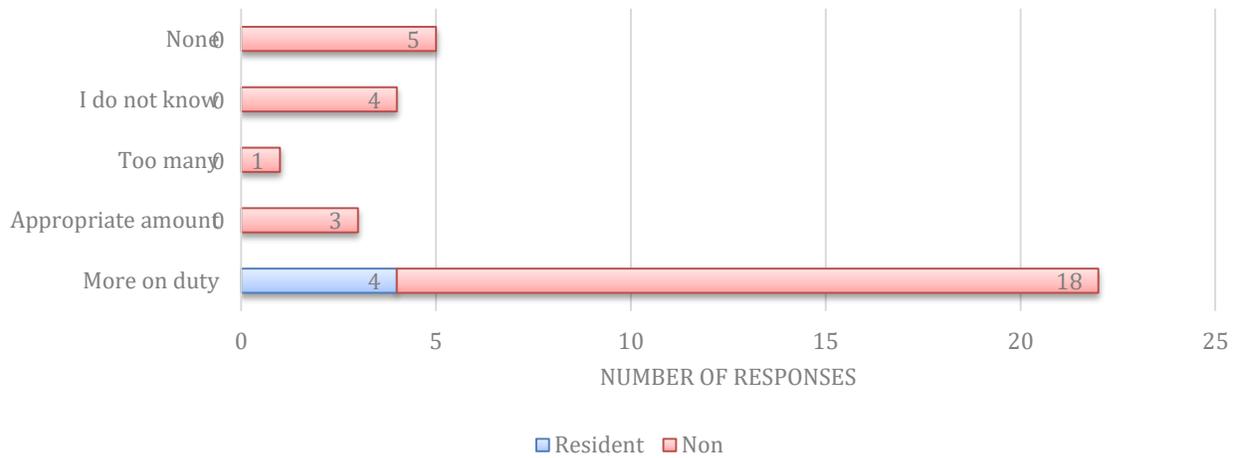
Appendix XXIV: Survey Figures



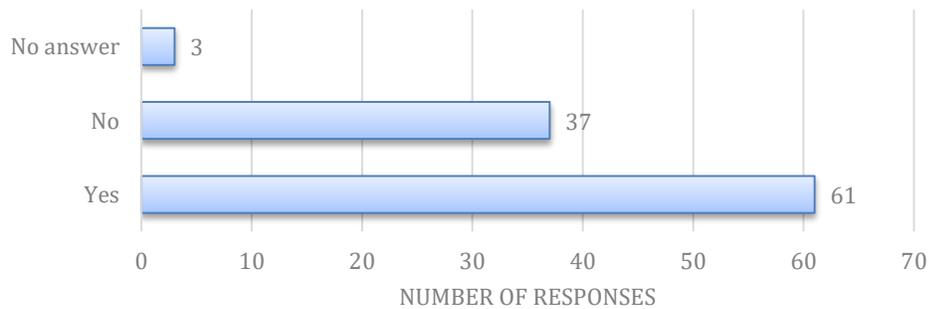
How do you feel about the amount of lifeguards? - All

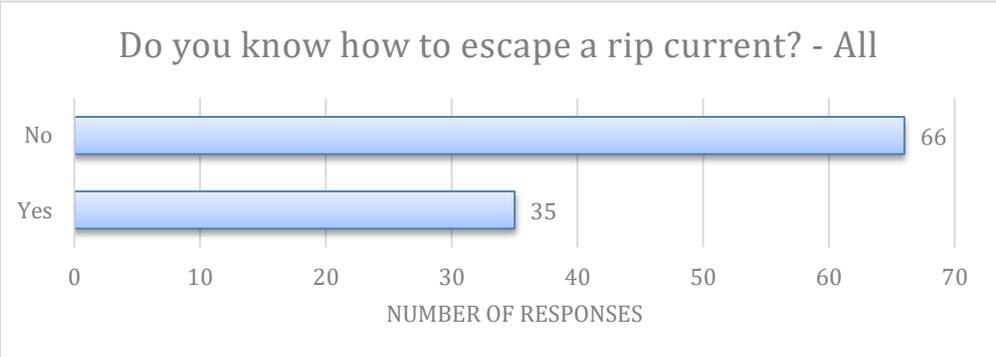
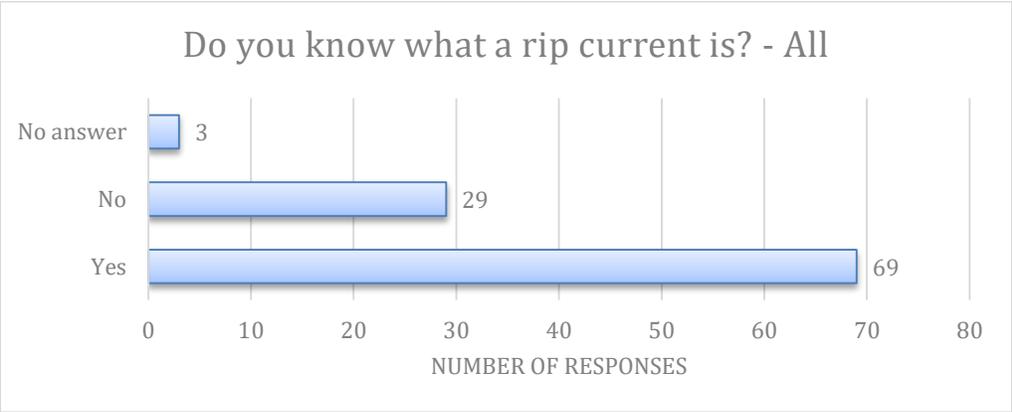
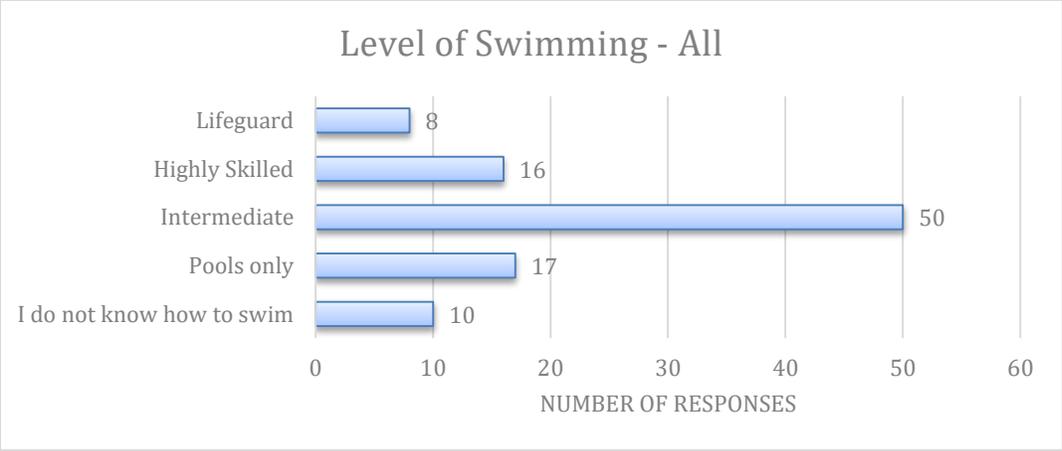


How do you feel about the amount of lifeguards? - Condado

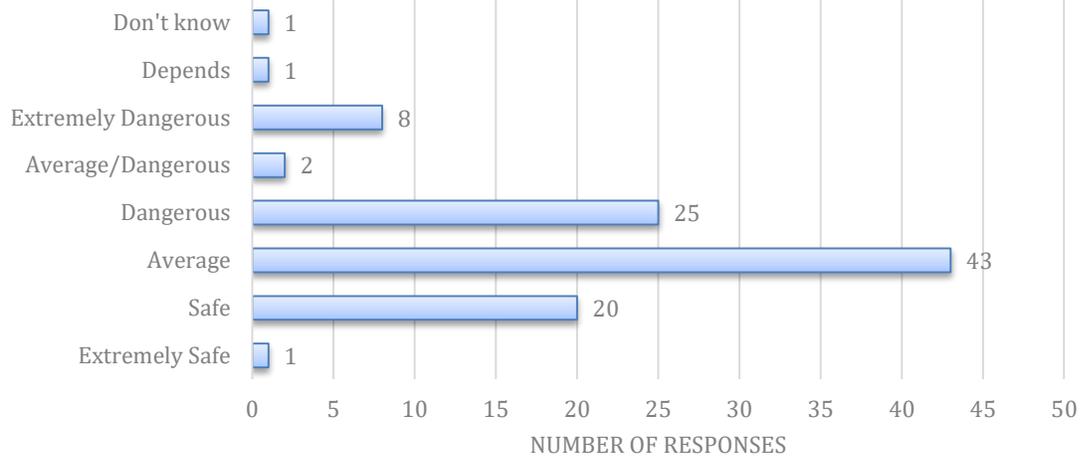


Have you taken swimming lessons? - All

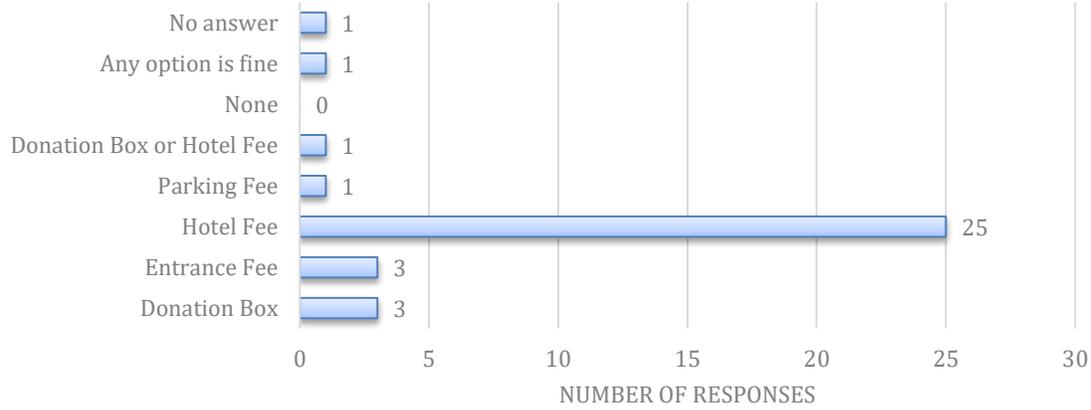




Thoughts on Safety of Beach - All



What funding method would you utilize? - Condado



Preferred Fee - Condado

