



# **Wheels, Heels, and Pedals**

## **Website Enhancements**

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## **Abstract**

The Nantucket website “Wheels, Heels, and Pedals” was created in 2003 to provide information on and promote alternative methods of transportation to Nantucket residents and visitors. The goal of this project was to enhance the current website for a more interactive and educational use for visitors of all ages. This project is expected to be a multi-year project with the ultimate goal of reducing auto-dependency and traffic congestion on Nantucket. This project was sponsored by ReMain Nantucket and the Town of Nantucket Planning and Land Use Services.

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## Executive Summary

Nantucket, an island 30 miles off the cape of Massachusetts, is a popular summer tourist destination. Nantucket is an excellent example of a tourist island that benefits economically from the tourists, yet also has complications from a large number of visitors in a small town and island. During the off-season, the population on the island is around 10,000 and there are little to no problems with transportation services. However, in the summer months the population increases significantly and traveling around the island becomes difficult. Since Nantucket has a limited land area, this large increase in population creates tremendous stress on social services and public infrastructures. A main stress experienced on Nantucket is traffic congestion during the summer. Based on the possible net accumulation of vehicles from the ferry between July 2010 and July 2013, there were about 21,500 vehicles on island in July 2013. This number decreased significantly as the seasonal visitors left the island starting in September and ending with around 14,000 vehicles in February 2013.

To alleviate the transportation stresses on Nantucket due to tourism, several organizations worked together to create a website called Wheels, Heels, and Pedals (WHP). The website was designed to reduce auto-dependency and traffic congestion on the island by displaying the Nantucket Regional Transit Authority (NRTA) Shuttle services, illustrating the island's system of bike paths and sidewalks, and by aggressively marketing the use of these alternative transportation methods to all who visit the island ("Wheels, Heels and Pedals: Mission," 2010). Although the current website is a good start in educating tourists and residents about alternative transportation methods, the WHP website has become outdated.

The goal of this project was to design a prototype of an interactive and educational web-based platform for the existing public transit, walking, and biking on Nantucket. This prototype would also establish a base for future development of the current WHP website and is expected to be a multi-year project.

To enhance the functionality of the WHP website, we proposed incorporating new technologies, such as QR codes, which could benefit Nantucket residents and tourists by promoting non-automobile transportation methods. To accomplish our goals of enhancing the WHP website, our team developed the following objectives:

- Assessed the content and interfaces of comparable web-based systems that promote non-automobile transportation methods

- Explored the feasibility of interactive and educational technologies available for the development of a new website
- Analyzed the needs of residents and visitors such as information on transportation methods and points of interest
- Designed a prototype website that implemented several new web-based technologies and serves as a foundation for future development of this project

In order to accomplish our objectives, we started by conducting assessments on the current WHP website and explored Nantucket by riding bicycles to discover points of interest and to learn about the existing Nantucket bike paths. Subsequently, we conducted interviews and focus groups with various organizations to determine what was needed to be updated on the current WHP website. We also discussed with the web development expert, Tihomir Ivanov, the feasibility of using different technologies for updating the website. We then organized all our ideas and designed a prototype for the new WHP website and discussed how to market the new WHP website once launched in 2014. Since the website is intended to function properly for years without updates, we discussed ways of maintaining the website at a low cost for our sponsors.

Our final website prototype has several new upgrades such as language support, drop down menus, picture slide show, interactive maps, and filter features for bike trails that could ultimately make the website more user-friendly and interactive. To market and advertise the website, we designed a business card with a QR Code that leads directly to WHP. For those without a smartphone, the link to the website was provided on the business card.

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## 1.0 Introduction

Despite the images of paradise they can inspire, touristic islands have been suffering from problems such as seasonal population influx, infrastructure limitations, and public resource scarcity. For example, during tourist seasons a significant number of people arrive on the islands, swelling the local population and causing traffic congestion. This increase of population causes stress on the local infrastructure and resources, such as roads and parking lots. The increase also puts stress on public transportation. When the area's population exceeds the limit of transportation systems it becomes inefficient and even dangerous. Accidents are more likely when there are more automobiles on roads.

Nantucket, an island 30 miles off the cape of Massachusetts, is a popular summer tourist destination and is an excellent example of a tourist island that benefits economically from the tourists, yet has complications from a large number of visitors in a small town and island. The island measures about 15 miles in length running from east to west and 3 miles wide, measuring about 48 square miles overall. During the off-season, the population on the island is around 10,000 and there are little to no problems with transportation services. However, in the summer months the population increases to about 50,000 ("About Nantucket - Town and County of Nantucket," 2013) and traveling around the island becomes difficult. Since Nantucket has a limited land area, this large increase in population creates tremendous stress on social services and public infrastructures.



**Figure 1: Main Street, Nantucket, Summer 2009**

<http://remainnantucket.org/#16>

To alleviate transportation stresses on Nantucket due to tourists, several organizations including the Town of Nantucket created a website called Wheels, Heels, and Pedals (WHP). The mission of the Transportation Marketing Group is to educate residents and visitors about Nantucket's transportation choices with the goal of decreasing traffic congestion.

The website was designed to reduce auto-dependency on the island by displaying Nantucket Regional Transit Authority (NRTA) Shuttle services, illustrating the island's system of bike paths, and by aggressively marketing the use of these alternative transportation methods to all who visit the island ("Wheels, Heels and Pedals: Mission," 2010). The current website serves as a good start in educating tourists and residents about selecting alternative transportation. However, the content on WHP website has become outdated and new technologies have emerged that can be used to improve the website, such as Quick Response (QR) Codes and new web design technologies.

The goal of this project was to design a prototype of an interactive and educational web-based platform for the existing public transit, walking, and biking on Nantucket. The essential goal of this project was to produce a prototype of an updated website with more accessible interactive elements for Nantucket visitors and residents. This prototype would also establish a base for future development of this multi-year project.

## 2.0 Literature Review

In 1659, the first English settlers arrived on Nantucket and developed a community of farmers and shepherders on the isolated island. Occasionally, drift whales washed ashore and the island residents discovered that whale oil could be a valuable trade commodity. By the late 1600s, the Nantucket residents began organizing whaling expeditions on small boats to pursue Right whales which were of moderate size and slow moving and, therefore, easy to catch. Deep-sea whaling began in the early 1700s, and Nantucket was quickly established as the whaling capital of world. However, by the 1830s, the petroleum fields of Pennsylvania produced less expensive and more easily obtained oil leading to the decline of the Nantucket whaling industry (Oldham, 2013).

In the mid-1800s, the Nantucket population decreased from about ten thousand to just over four thousand. The individuals who stayed on the island decided that tourism might be the only catalyst to Nantucket's recovery. The first big summer hotel was built in the 1870s marking the beginning of Nantucket as a prosperous tourist destination (Oldham, 2013).

In the remainder of this section, we will provide an overview of tourism, the problems that tourism brings to a community, and a discussion of ways that communities have minimized or addressed the negative impacts of tourism.

### 2.1 Why Nantucket is a Tourist Destination

Tens of thousands of tourists come to Nantucket to experience the beautiful settings and rich history of the island. The mix of natural beauty and historic charm attracts over 50,000 tourists and seasonal residents between the months of May and September ("About Nantucket - Town and County of Nantucket," 2013). This is a fivefold increase in population as there are around 10,000 year round residents.

Visitors can walk along Main Street and easily imagine being in a mid-19th century town. While exploring Nantucket's downtown region; visitors are surrounded by scenery that has been preserved through history. Nantucket itself is a National Historic Landmark (DeSousa-Mauk, 2011). There are over 800 pre-Civil War houses and buildings still standing and that have been conserved by the community. As said by Desousa-Mauk, "someone transported from a century ago would find much of the 'old town' unchanged."

Along with its historic charm, Nantucket has pristine beaches as seen in Figure 2 that attract thousands of people every summer. The island is only 48 square miles and is divided into

three sections that capture Nantucket's most visited beaches: North Shore, South Shore, and East Shore.



**Figure 2: Nantucket Beaches**

[http://nescomputerlab.com/nescomputerlab/Nantucket\\_4\\_Kids.html](http://nescomputerlab.com/nescomputerlab/Nantucket_4_Kids.html)

The North Shore beaches tend to have warmer temperatures and calmer conditions making the beaches generally a more desirable destination for families with children. Unlike the North Shore which faces the Nantucket Sound, the South Shore overlooks the Atlantic Ocean and has awe-inspiring waves. While both the North and South Shore are easy to access by bike or shuttle bus, the East Shore holds the most remote beaches of the island. In fact, it is often necessary to use four wheel drive vehicles to reach some areas ("Discover Nantucket," 2013). The three main shores of the island provide a beach for all types of beach goers whether visitors want to relax or be more active.

### 2.1.1 Planning a Trip to Nantucket

Before traveling, it is natural for people to plan out what activities they will be doing, where they will be staying, and other trip essentials. Planning a trip can be achieved through many ways including word of mouth, magazine articles, and flyers. However, one of the most common ways to plan a trip is through the Internet. Nantucket has multiple websites for people to visit before coming to the island. Some popular sites include the Chamber of Commerce

website<sup>1</sup>, the town website<sup>2</sup>, and a well-known Nantucket travel guide operated by two very involved residents<sup>3</sup>. The WHP website is linked to most of these travel planning sites. For example, through the travel guide the WHP website can be accessed in three mouse clicks.

## 2.2 Effects of tourism

### 2.2.1 Positive and Negative Effects

The rapid influx of visitors creates a profitable economy for the year-round residents of any tourist area. A recent report prepared for the World Tourism Organization (WTO) shows that domestic and international tourism in 1995 combined to create over 200 million jobs worldwide (Cheong & Miller, 2000). And according to recent statistics, tourism provides about 10% of the world's income and employs almost one tenth of the world's workforce.

It is true that tourism helps provide income and employment to local communities. However, tourists do not just bring money to touristic areas, they also bring stress. This stress is put on local resources and services. Some resources affected include the supply of water, gas, electricity, and the services of garbage collection, recycling, public transportation, and health services.

In addition, in areas where tourism is seasonal traffic congestion is a well-known stress. When thousands of visitors come to a region that normally inhabits far less than it does during the tourist season, crowding is a given. This can especially be seen in small areas and even more so in small islands where roads are limited. Local public transportation can become overwhelmed by the new hordes of people that begin to use its services. As a result, crowded buses and trains deter tourists from using these services and they may bring their own vehicles to an area, ultimately adding to the congestion.

Tourism also can generate negative socio-cultural impacts like crime, racism, prostitution, and disruption of local tradition. Since the tourists are not familiar with the local social norm, tourists might also behave differently in dress code or speak unacceptable 'vulgar' language. All these differences between tourists and local residents can threaten or devalue the local traditional values.

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<sup>1</sup> <http://www.nantucketchamber.org/>

<sup>2</sup> <http://www.nantucket-ma.gov/Pages/index>

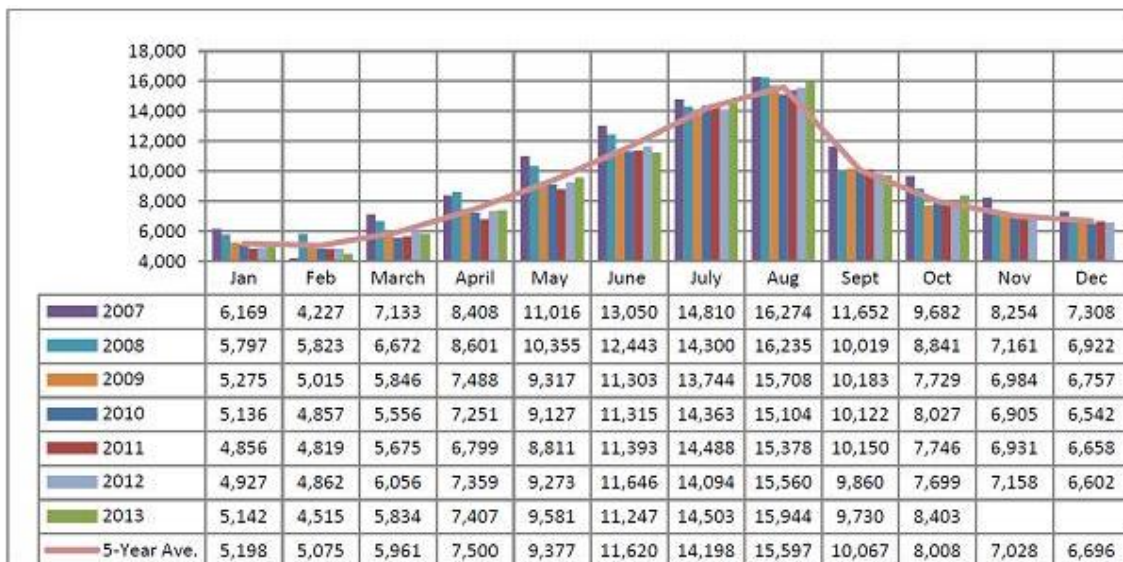
<sup>3</sup> <http://www.nantucket.net/index.php>

### 2.2.2 Effects on Nantucket from Tourism

Since Nantucket is a popular tourist destination in the United States, the local community profits from tourism, but also suffers from the stresses noted previously. As a result, the Nantucket government and other organizations collaborate to develop programs and methods to minimize the negative impact of tourists. For example, the Nantucket Police Department employs more policemen from the mainland during May to September (Community Service Officers 2013 Summer Season, 2013).

One of the main stresses experienced on Nantucket is traffic congestion during the summer. Based on registered vehicles in July 2010 and the possible accumulation of vehicles from the ferry between July 2010 and July 2013, there were about 21,500 vehicles on island in July 2013. This number drastically decreased as the seasonal visitors left starting in September, and ended with around 14,000 vehicles in February 2013<sup>4</sup>. In Table 1 from the Regional Transportation Plan, there is data concerning how many cars and trucks travel to Nantucket via the Steamship Authority ferry each month for the past six years. It can be seen from the table that August has the highest number of vehicles travelling to Nantucket with a five year average of 15,597 vehicles. February has the lowest number of vehicles with only 5,075 travelling to Nantucket.

**Table 1: Total Cars and Trucks To/From Nantucket via SSA**



<sup>4</sup> Personal email with Mike Burns on December 11, 2013

The problem with traffic congestion on the island is exasperated by the fact that the island's developable land had dwindled from 53 percent to 8 percent from 1987 to 2010, while land held in conservation had nearly doubled to 60 percent (Brace, February 2012). As a result, roads cannot be built across conservation areas and traffic is forced onto the few roads that have been established throughout the island. In a nutshell, the tremendous increase of cars from tourists makes the already congested roads even more crowded

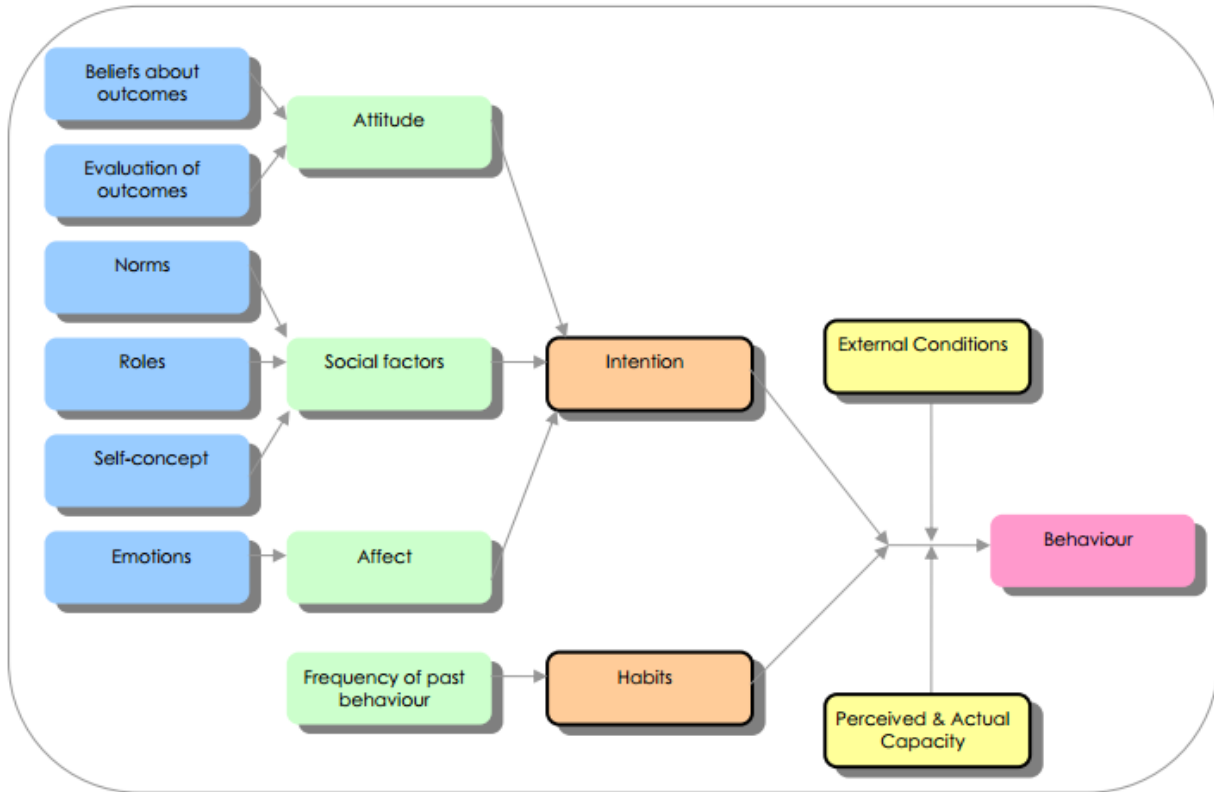
## **2.3 How to Reduce Stress from Tourism**

Tourism affects Nantucket in many ways, both positively and negatively. Tourism brings economic advantages as mentioned in Section 2.2, and without this market, the island residents would not be able to make a living. However, certain stresses arise that are caused by visitors, especially relating to transportation. These stresses will remain the same without raising awareness. Raising awareness can be challenging, as it involves changing behavior. In this section, we will investigate the difficulties of promoting behavior change related to transportation, and what has been done so far on Nantucket.

### **2.3.1 Challenges in Changing Behavior**

Encouraging people to change their accustomed routines and behaviors is one of the more difficult obstacles to promoting new practices, such as changing the choice of transportation. To change people's habits, one must first understand what motivates people to do what they do. Most modern theories of behavior change attempt to comprehend how external conditions combine with individuals' internal factors to determine their behavior. Triandis' Theory of Interpersonal Behavior says that behavior is a product of three key factors: habits, intention, and facilitating conditions (Winefield, 2005). Intention has three key factors as well that include: attitude, social factors and emotions. Figure 3 is a modified model of Triandis' Theory. It is useful to see the model as a cycle of behavior, where each factor influences another.





**Figure 3: Triandis' Theory**

<http://www.ccsa.asn.au/files/climatechange/Report%20on%20Behaviour%20Change.pdf>

There may be many factors that influence people visiting Nantucket to bring their own cars. Perhaps, they have a large family and need a minivan. Maybe they simply do not know how to ride a bicycle or cannot walk. Some reasons may be unchangeable, but the focus is to change the minds of those who are only using their cars because it is a habit or viewed as the social norm.

### 2.3.2 Methods of Raising Awareness

There are multiple ways to bring issues to the attention of society. Educational programs use many approaches including pamphlets, posters, emails, websites, and advertisements. Our project will focus on paperless tactics of raising awareness, specifically with web-based technology.

### 2.4 Updating Website with Current Technologies

Websites that integrate interactive elements are more likely to be viewed and enjoyed, so the following sections will focus exclusively on web technologies and awareness raising methods specific to websites.

### 2.4.1 Technologies and Tools

With the help of current technologies, the WHP website could be improved to better promote alternative methods of transportation. People love using the newest and latest technology. There is something special about interactivity. Learning by doing is a much better way to learn than by merely reading. To enhance the functionality of the WHP website we proposed using the most feasible new technologies available.

#### *QR Code*

A QR code is a type of matrix barcode, or two-dimensional barcode, which consists of black modules (square dots) arranged in a square grid, which can be read by an imaging device such as a smartphone with a camera ("QRcode.com | DENSO WAVE," 2012). Although the QR code was originally designed for industrial use, it is now commonly used in consumer advertising. The QR code can provide useful information in different forms such as the plain text, the Uniform Resource Locator (URL), and other customized contents. The use of QR Codes is free to the public and not registered privately through patent. QR codes function by using binary codes, which are then translated into characters that create a link. If part of the code is corrupted, an Error Correction Feature reorganizes the damaged data ("QRcode.com | DENSO WAVE," 2012). For the use in Nantucket, QR codes could be used to provide information such as mapping paths, bus schedules, and historic sites' opening hours to cyclists and walkers using the bicycle paths. There are many easy-to-use websites that generate QR codes. For example, the QR code in Figure 4 was generated using QRcodemonkey.com<sup>5</sup>.



**Figure 4: WHP Website QR Code**

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<sup>5</sup> <http://www.qrcode-monkey.com/>

### *Action Camera*

Action cameras refer to a group of cameras which are known for being lightweight, rugged, wearable or mountable on unusual places such as cars or boats. There is a great array of prices and companies that produce these types of cameras. Popular brands include GoPro, Veho, and Contour. The purpose of this technology for the WHP website would be to take steady, high quality videos of bike or walking tours to give people a closer look of what it is like to visit Nantucket.



**Figure 5: Action Camera**

<http://www.amazon.com/Contour-1700-2-Old-Packaging/dp/B0097CD8II>

### *Smart Phone Applications*

There are several applications that can be used to show interactive and educational information related to Nantucket. Such examples include “Maplets<sup>6</sup>” and “Nantucket 360<sup>7</sup>” as seen in Figure 6. Maplets is an offline map application on mobile platforms, with nearly 10,000 maps of trails worldwide. This application finds all Portable Document Format (PDF) forms of maps of an area a visitor is close to. Once a map is loaded, the GPS tracker within the application is able to locate where the user is on the map. Nantucket 360 is another useful phone application, designed for the Nantucket residents and visitors. This application provides information on Nantucket transportation, restaurants, shopping, activities, and several other points of

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<sup>6</sup> Maplets Home Page: <http://www.mobilemaplets.com/>

<sup>7</sup> Nantucket 360 Home Page: <http://nantucket360app.com/>

interests. Both applications can be downloaded from the Apple App Store and Google Play store.



**Figure 6: Maplets (on left) and Nantucket 360 (on right) Screenshots**

### *Social Media*

Social media refers to the interaction among people through virtual communities and networks. Information and ideas are created or shared in these virtual systems. Current worldwide popular social media include Facebook with 1,119, Google Plus with 300, and Twitter with 232 million users (Ahlqvist, Bäck, Halonen, & Heinonen, 2008). Due to the enormous number of users, social media websites are desirable platforms to share news and advertise throughout. People share and post links to articles on Facebook and tweet them on Twitter. 75% of the people receive their news forwarded through e-mail or social media posts, while 37% admit they have shared a news item via Facebook or Twitter (Gross, 2010). The purpose of establishing social media accounts for the WHP website is to broadcast all interactive information to a targeted audience more efficiently.

## 2.4.2 Incorporating New Technologies into the WHP Website

The technologies and tools described in the previous section can be used to create different interactive and educational value to a website. This is important for a website, especially one that targets tourists, because using more modern web development tools and techniques creates an online experience enriched with possible opportunities for people to have while visiting. It builds excitement and makes coming to Nantucket and exploring the island without a personal vehicle more attractive of an option.

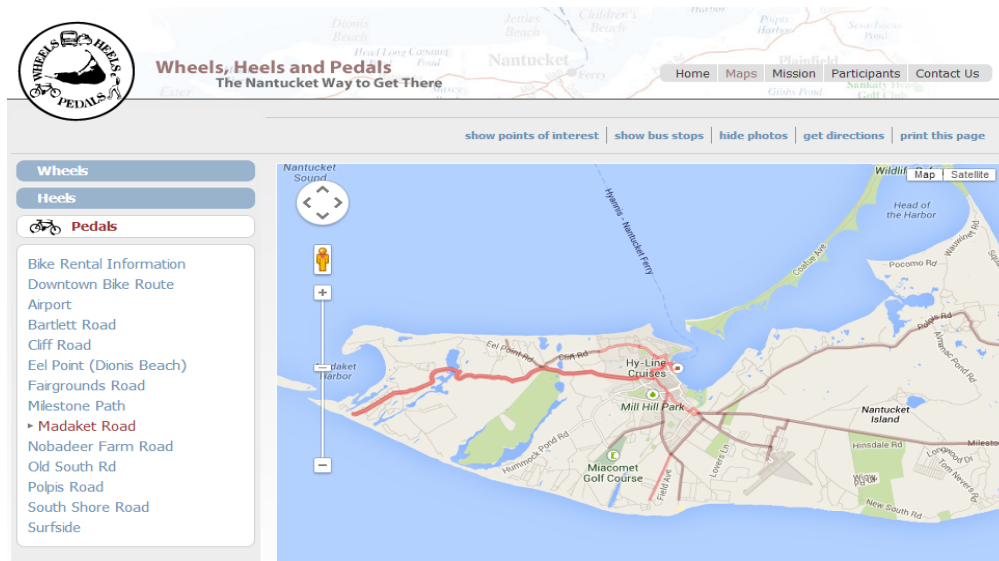
### *Virtual Bike Tour*

Using an action camera can make an engaging video of biking while on Nantucket and can entice visitors to bike by making it look easy and enjoyable. A virtual bike tour would include video and photography that captures the bike paths, the surroundings, and bikers themselves. A bike tour could feature different interests that would attract various tourists, such as tours focusing on shopping or beaches. If a video is taken with the focus on the bikers, it could influence the interest of people who have never experienced Nantucket by bike. Here is a good example of a video that shows multiple camera angles and bikers enjoying their ride: <http://www.youtube.com/watch?v=7dB1SPZ7OtE>.

One of the key elements in the biking video is the beautiful natural scenery, which could include unexpected rainbows, quiet flat grasslands, or running rivulets along a trail. There is no rush when riding a bike, a visitor can go at a casual pace and absorb the natural Nantucket beauty. In other words, the visitor can find a balance between riding towards destinations and enjoying the beautiful landscapes. This would be the most important “take away” from a virtual bike tour video.

### *Interactive Maps*

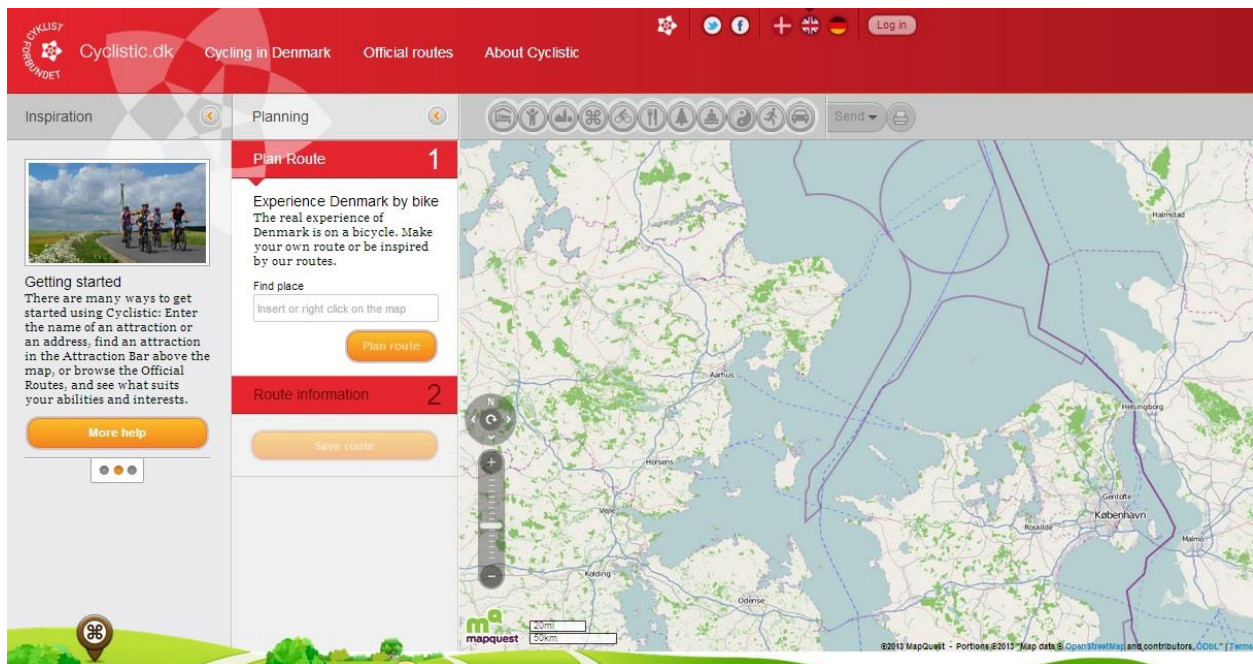
Interactive maps are highly customizable and engage online visitors. The goal of interactive maps is to display the interests and local vistas for tourists via map customization. For example, the current WHP website has multiple maps. The maps highlight different trails for biking, walking, and bus routes. Figure 7 is a screen shot of a map of the Madaket Road bike path. Unfortunately, all of the maps displayed on the current website are “static” in that they do not adapt to the needs and interests of the web browsing visitor.



**Figure 7: WHP Interactive Map**

### 2.4.3 Cyclistic

Cyclistic<sup>8</sup> is a website that works as the main gateway for information about bicycling in Denmark. It combines routes for cyclists with points of interests, such as food, sights, accommodations, and much more. Figure 8 is a screenshot of its homepage.



**Figure 8: Screenshot of Cyclistic Homepage**

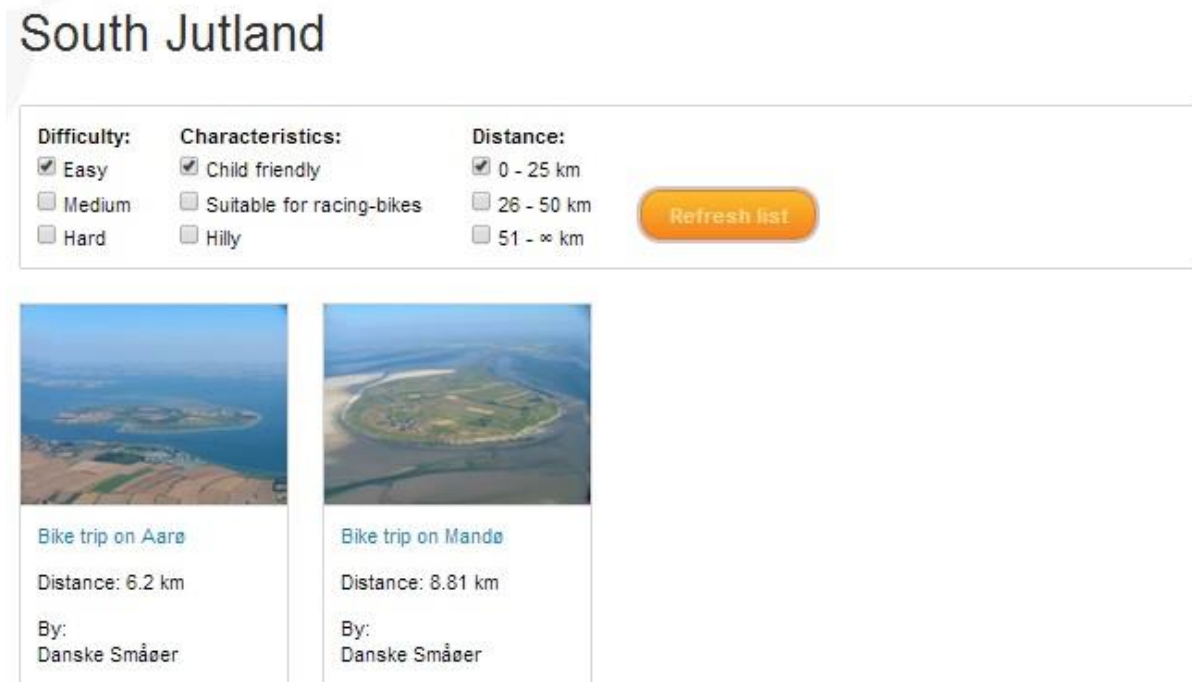
<sup>8</sup> Cyclistic website address: <http://www.cyclistic.dk/en/>

One important feature the Cyclistic website offers is its language options. Although Denmark only has one official language, Danish; a few languages are quite popular among the residents, such as English (86%), German (58%), and French (12%)<sup>9</sup>. As a result, the Cyclistic website supports different languages like English, German, and Danish, as shown as flags in the upper right corner (circled in white) in Figure 9. However, currently the WHP website only supports English, deterring non-English speaking tourists from using the website.



**Figure 9: Cyclistic Language Options**

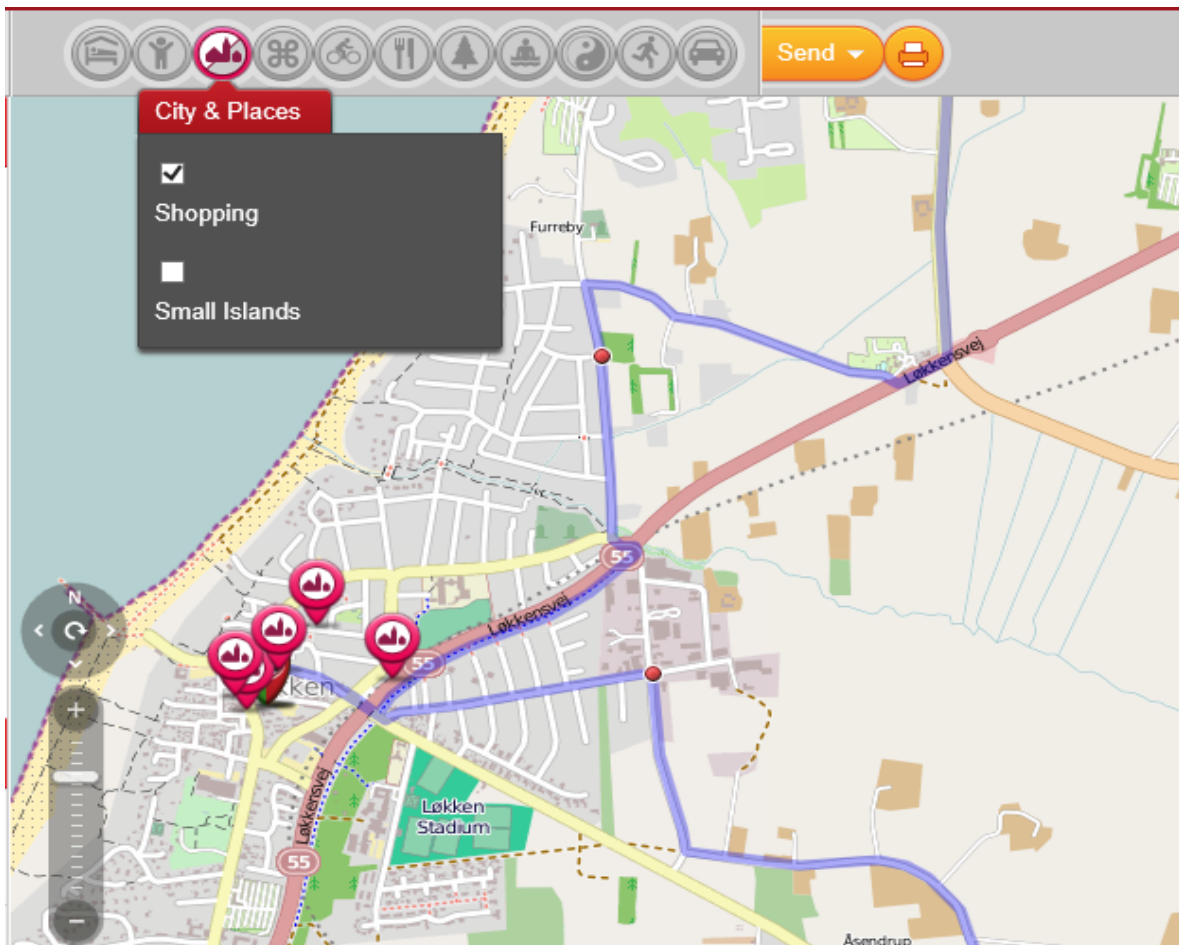
Another advantage of Cyclistic is the customization of features available to users of various bike routes. As a result users are actively engaged while they virtually explore the bike trails in Denmark. For example, if a user wanted a short relaxing trip with their children, they could select the options of *Easy*, *Child Friendly* and *0 – 25 km*. This kind of interactivity is lacking on the WHP website. Figure 10 illustrates the customization feature on Cyclistic.



**Figure 10: Cyclistic Bike Route Customization**

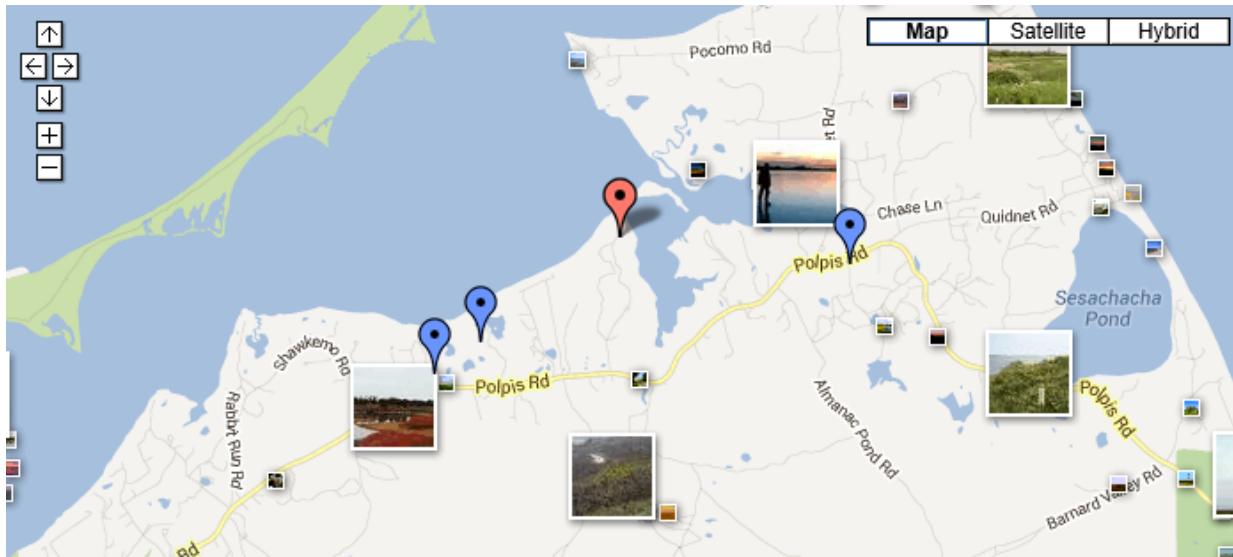
<sup>9</sup> Europeans and their Languages [http://ec.europa.eu/public\\_opinion/archives/ebs/ebs\\_243\\_en.pdf](http://ec.europa.eu/public_opinion/archives/ebs/ebs_243_en.pdf)

As shown in Figure 11, the mapping service provided by Cyclistic is able to display the bike routes in unique colors, and it also features drop down buttons that customize attractions along the route. These points of interests include shopping centers, culture sites, cycling shops, restaurants, natural scenery, and museums. The analogical symbols on both buttons and tags make sifting through specific interests user-friendly. The mapping services on the WHP website only show the general points of interest without specifying the category or having analogical symbols on pins shown in Figure 12.



**Figure 11: Cyclistic Map Example**





**Figure 12: WHP Map Example**

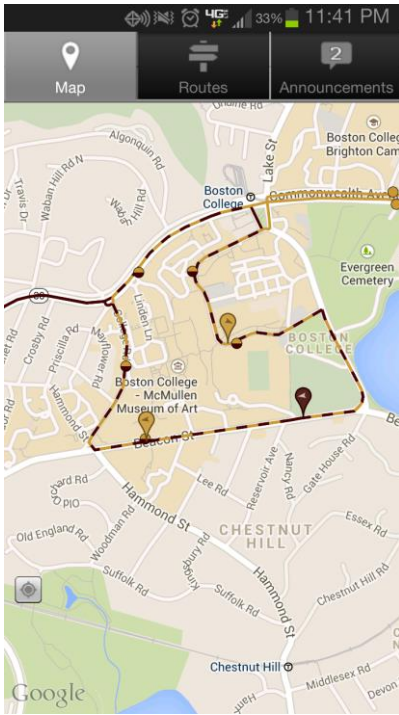
#### 2.4.4 Transloc

TransLoc was founded in 2004 to empower mass transit with the best possible technology<sup>10</sup>. TransLoc provides their customers with the most technologically advanced real-time maps and arrival prediction of public transit systems. TransLoc also provides a convenient, unified interface which displays the routes, schedules, arrivals, and buses.

The real-time data from TransLoc service is useful to the local residents and tourists. The service is able to show its users how many minutes away a bus is which eliminates the risk of missing a bus or waiting for long periods of time. This is a feature that the WHP website may be able to develop. Figure 13 displays the real-time data feature from TransLoc.

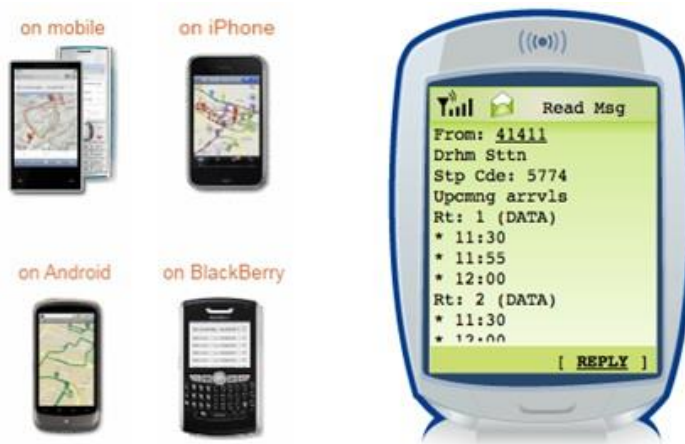
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<sup>10</sup> TransLoc website address: <http://transloc.com/about-transloc/>



**Figure 13: TransLoc Real-Time Feature**

Another advantage that TransLoc has is the accessibility across different mobile platforms, including iPhone, Android, and BlackBerry. TransLoc also supports the Short Message Service (SMS) to deliver to non-smartphone users. The information of the WHP website can only be reached from normal web browsers and lacks the support for specific mobile platforms. In Figure 14, it shows that TransLoc is supported by smart phones and other cell phones.



**Figure 14: (Left) TransLoc Smartphone Application and (Right) TransLoc SMS**

<http://transloc.com/products/>

## 2.5 Summary

As a well-known tourist destination, the Nantucket community has been stressed by the seasonal traffic congestion from considerable increase of cars brought by tourists. Although a few Nantucket organizations have made efforts to mitigate this stress, more alternative approaches can be considered such as incorporating different technologies for tourists to gain information from. Our project will work on designing a practical prototype for the new Wheels, Heels, and Pedals website with the aim of functioning as an information platform for incoming tourists.

### 3.0 Methodology

The goal of this project was to design a prototype website to replace the current Wheels, Heels, and Pedals website. To accomplish this goal, our team developed the following objectives:

- Assessed the content and interfaces of comparable web-based systems that promote non-automobile transportation methods
- Explored the feasibility of interactive and educational technologies available for the development of a new website
- Analyzed the needs of residents and visitors such as information on transportation methods and points of interest
- Designed a prototype website that implemented several new web-based technologies and serves as a foundation for future development of this project

The flow chart shown below in Table 2 highlights our objectives and illustrates how we achieved these objectives.

**Table 2: Timeline of Project**

Task	Weeks							
	Prep	1	2	3	4	5	6	7
Assess comparable web-bases systems								
Incorporate the interactive and educational technologies								
Analyze the necessities of residents and tourists								
Design a concrete prototype								

### 3.1 Assess Comparable Websites

In order to update the Wheels, Heels, and Pedals website, we researched and analyzed similar existing websites, which share the similar goal of promoting non-automobile transportation methods, especially biking. Many bike-friendly tourist cities, such as Copenhagen, Denmark and Portland, Oregon, have official websites and there are also a few unofficial websites supported by local communities. We assessed the strengths and weaknesses of these websites on various criteria such as authority, currentness, coverage, accessibility, interactivity, popularity, mapping service, and unique contents. These criteria are outlined in more detail in Table 3.

**Table 3: Website Criteria**

<b>Criteria</b>	<b>Interpretation</b>
<b>Authority</b>	Are the contents on the website under legal licensing agreement? Are the contents from a trusted domain or organization?
<b>Currentness</b>	When was the information produced or updated? Are the contents already outdated? Are the links still working?
<b>Coverage</b>	Does the web page require special software or applications to view? Is there a fee to view content? Are there any browser requirements for viewing?
<b>Accessibility</b>	Are the web pages easily accessible by the users? Are the web pages accessible on various devices, such as tablets or smart phones?
<b>Interactivity</b>	Can users be involved in the web content such as leaving comments, sharing links, or sending feedback?
<b>Popularity</b>	How popular is the website locally, regionally, nationally or worldwide?
<b>Mapping Service</b>	Does the website effectively use any kind of maps to provide information, and how?
<b>Unique Contents</b>	Are there any unique types of content to promote modes of transportation, such as local activities, festivals?

Assessments of websites have involved using the criteria above and interactive interviews with the sponsors and Tihomir Ivanov. Tihomir Ivanov is the founder of Ivanov New Media Studio<sup>11</sup> that specializes in interactive design and web application development. Tihomir helped develop the Wheels, Heels, and Pedals website from its beginning, so we received useful guidance from him on the feasibility of applying more appealing designs and interactive elements on the WHP website. After we discussed these interactive designs and features with our sponsors for their preferences, we decided which of these designs or features we wanted to apply on the updated WHP website.

In addition, we have interviewed a few year round residents that are involved in public relations and local businesses affiliated with Nantucket visitors. The specific questions we asked and the results from those questions are detailed in Chapter 4 where we present our project outcomes.

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<sup>11</sup> <http://ivanovnewmedia.com/>

### 3.2 Explore Feasibility of Interactive and Educational Technologies

One of the objectives of our project was to explore practical ways to provide interactive elements to educate Nantucket's residents and visitors. Some of the different options that we explored include incorporating QR codes and virtual bike tours.

To explore the feasibility of using these types of technologies to advance the WHP website, we started by determining how to develop and apply QR codes and action videos that could be used for a virtual bike tour. For example, we explored how to set up QR codes and how to link them to pages on the WHP website and other relevant websites.

We researched where the best locations to place QR codes were along the bike trails of the island. We biked multiple trails and talked to many involved Nantucket residents to hear where they best thought QR codes could be placed. One issue we thought about while investigating these locations are the rules and regulations of Nantucket. For example, the Nantucket Historical Association (NHA) dictates what signage is permitted on the island (Regulations and Guidelines for Signs on Nantucket Island, February 2005). So it was necessary to discuss with Nantucket organizations related to the NHA and how we could apply QR codes without violating any rules or regulations.

Developing a virtual bike tour involves recording video and taking pictures with an action camera while riding a bike trail. We wanted to structure the virtual tour from the information obtained from interviews conducted while on the island and from our own bike riding. We interviewed Kate Hamilton and David Sharpe at Visitors Services to obtain possible ideas on what trails were most suitable for a bike tour. The details of their suggestions are outlined in the Results section and Appendix. We also performed field observations to identify the best routes for the tours. In fact, during the first couple of weeks on Nantucket, as a group we explored most of the trails available to the public to get a sense of the visitors' experiences. There was also the idea of having specialized virtual tours that target specific interests of tourists such as shopping, historical sites, and scenic routes.

### 3.3 Analysis of Resident and Tourist Needs

An important aspect of our project is to ensure that it appeals to visitors of the island. We first needed to research the demographics of Nantucket tourists. The demographics helped us target the most appropriate groups to promote to, since we were not on Nantucket during the tourist season and were not able to directly ask tourists any questions. We also talked to key people within the community that experience the yearly tourist population. Some key people on the island that were able to answer our questions include: Jason Bridges, local tour guide; Harvey Young, the owner of Young's Bicycle Shop; Noah Learner, manager of Young's Bicycle Shop; Kate Hamilton, Director of Nantucket Visitor Services; Jim Lentowski, Executive Director at Nantucket Conservation Foundation; and Jesse Bell, Assistant Director at Nantucket Islands Land Bank. We wanted to gain a better understanding of what tourists look for while on Nantucket and what information these key people can provide for the WHP website. Some questions included: What are the popular beaches? Restaurants? Museums? How long do visitors stay? How do visitors travel to main tourist attractions? What information do visitors want from your organization? We conducted personal interviews with the people mentioned above and received more information after interviewing them.

We also conducted a focus group to help us determine what content we should include in the updated WHP website. The focus group was after we researched different interactive methods we wanted to use in the WHP website. Some people and organizations that helped us with the new website design were Jason Bridges of Nantucket Bike Tour, David Sharpe of Nantucket Visitor Services and Tihomir Ivanov of Ivanov New Media. With their help and the input of other key people on Nantucket, our team was able to ascertain the appropriate content for the WHP website.

### 3.4 Design a Prototype Website

As the first team in this multi-year project, we wanted to design a prototype that implemented current web-based technologies and addressed necessities for future development. We planned on using web development platforms such as Wix<sup>12</sup> a free online website builder, for creating web pages. Then we would design a fresh, dynamic updated interface for the WHP website with the technologies that are available today that make a website interactive and user-friendly. Through the improvements of the website, we hoped to make it easily accessible

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<sup>12</sup> <http://www.wix.com/>



to appeal to a vast number of people. A key feature of the updated website is the educational portion that provides information to residents and visitors about the transportation choices of Nantucket. This was achieved through the use of virtual bike tours and interactive maps. We also hoped to develop a prototype of a virtual bike tour while we were on Nantucket, using video and photography of action cameras. Based on our prototype, more detailed virtual bike tours could be developed in the future for tourists to experience. To access the educational content of the updated website, we needed to plan how QR codes could be implemented on bike trails and key locations throughout the island in future development.

### **3.5 Summary**

The primary deliverable in this project was to design a prototype for the new interactive and educational Wheels, Heels, and Pedals website. In order to accomplish this deliverable, we conducted assessments on the current WHP website and explored Nantucket by riding bicycles to discover points of interest. Subsequently, we conducted interviews and focus groups with various organizations to determine what was needed to update on the current WHP website. We also discussed with the web development expert, Tihomir Ivanov, about the feasibility of using different technologies for updating the website. Then we designed the prototype for the new WHP website and discussed about how to market the new website once launched in 2014. Since the website is intended to function properly for years without updates, we discussed ways of maintaining the website at a low cost for our sponsors.

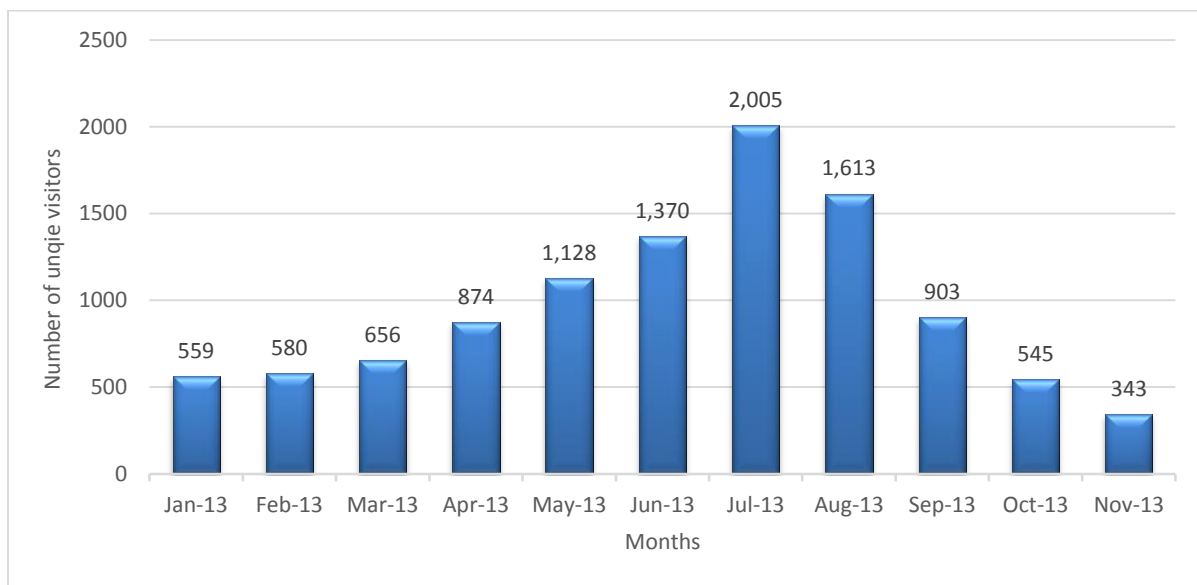
## 4.0 Results and Recommendations

In this section we present the results of our research into the development of a new interactive and engaging WHP website. Recommendations for implementation of the new website and future work are also provided.

### 4.1 Assessing the Current WHP Website

In order to assess the current WHP website, we analyzed multiple sets of web statistics generated by AWStats, a free powerful tool that produces advanced web, streaming, ftp (file transfer protocol) or mail server statistics, graphically<sup>13</sup>. The sets of data included unique visitors in the year 2013, number of visits, traffic sources, and search keywords in September 2013.

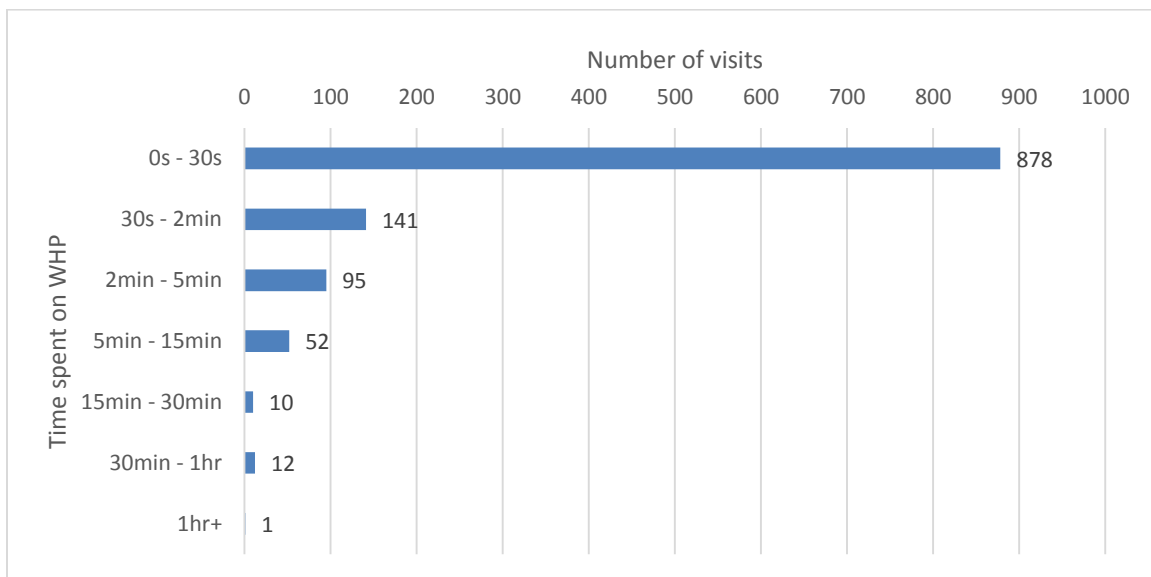
Figure 15 shows the number of visitors to the current WHP website from January to November 2013. The unique visitors were determined from their source locations in order to eliminate the multiple visits from the same computer. As can be seen in Figure 15, the highest number of unique visitors to WHP came during July and reached 2,000. If we compare this number with the average 50,000 summer visitors to Nantucket, 2,000 is a relatively small number. We recommend keeping track of number of visitors to the new WHP website and then comparing the new data in 2014 with old website data from 2013 to determine whether the new website attracts more visitors.



**Figure 15: Monthly Number of Unique Visitors in 2013**

<sup>13</sup> <http://awstats.sourceforge.net/> AWStates Official Website

As shown in Figure 16, over 70% of the visitors spent less than 30 seconds surfing the WHP website. The average time spent per visit on WHP was 1 minute 44 seconds. However, the average time spent per visit on global websites was 4 minutes 50 seconds based on Google's data<sup>14</sup> in 2011. One possible explanation for the difference in these two numbers is that the current WHP offered simple information for quick views and visitors generally lost interest after short period of browsing. In other words, the new WHP website should be designed to follow our recommendations of incorporating more interactive content to engage visitors for longer periods of time.

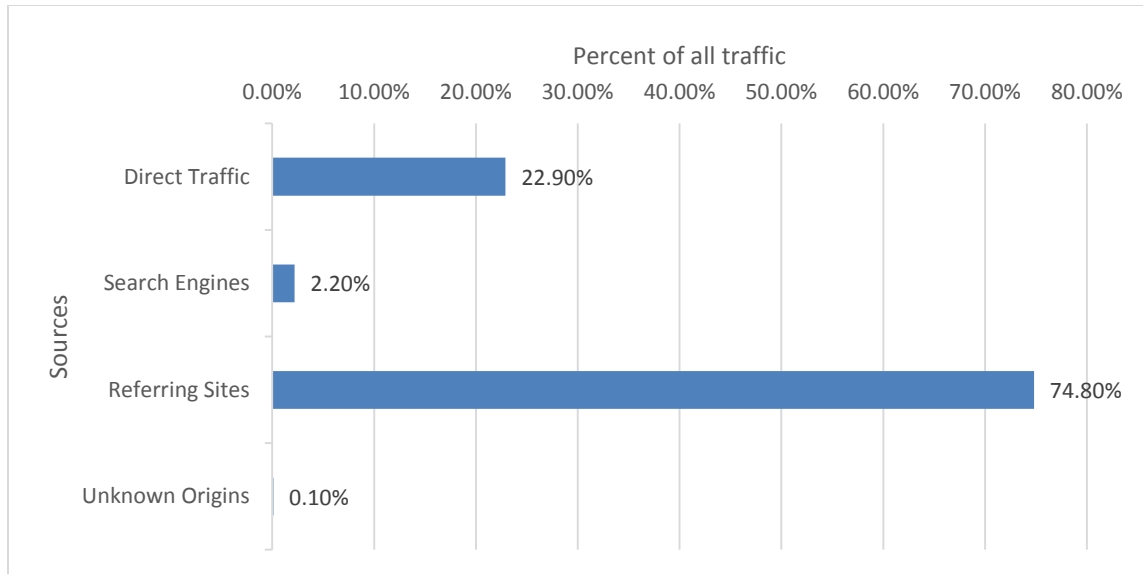


**Figure 16: Number of Visits in September 2013**

In the article explained by Avinash Kaushik<sup>15</sup>, direct traffic refers to people that arrive at a website via typing the URL of the website or from a direct link in an email. Main search engines include Google, Bing, and Yahoo. Referring sites are other websites sending traffic to the WHP website. From Figure 17, we learned that over 70% of the traffic of WHP in September 2013 came from external websites (Kaushik, 2013).

<sup>14</sup> <http://blog.kissmetrics.com/2011-web-analytics-review/> The 2011 Web Analytics Review

<sup>15</sup> <http://www.kaushik.net/avinash/web-analytics-demystified/> Web Analytics Demystified by Avinash Kaushik



**Figure 17: Traffic Sources in September 2013**

From Table 4, we learned that the top five referring links of WHP, about 45% of all referring sites, came from two websites, which were nantucket-ma.gov and nantucket.net. In order to gain more traffic, we recommend that the WHP developers work with nantucket-ma.gov and nantucket.net developers to insert more links to the WHP website into their own websites.

**Table 4: Top Five Referring Sites in Sept 2013**

Site	# Visits	% Referring Sites
Town of Nantucket - Page Index <a href="http://www.nantucket-ma.gov/pages/index">http://www.nantucket-ma.gov/pages/index</a>	263	19.4%
Nantucket.net - Biking on Nantucket <a href="http://www.nantucket.net/trans/bikes.php">http://www.nantucket.net/trans/bikes.php</a>	151	11.1%
Nantucket.net - On-Island <a href="http://www.nantucket.net/trans/on.php">http://www.nantucket.net/trans/on.php</a>	102	7.5%
Town of Nantucket - NANTUCKET VISITOR SERVICES and INFORMATION <a href="http://www.nantucket-ma.gov/Pages/NantucketMA_Visitor/index">http://www.nantucket-ma.gov/Pages/NantucketMA_Visitor/index</a>	61	4.5%
Town of Nantucket - Page Index <a href="http://www.nantucket-ma.gov/Pages/index">http://www.nantucket-ma.gov/Pages/index</a>	42	3.1%
Total	619	45.6%

Table 5 lists several keywords people searched that led them to the WHP website. The data in this table suggests that people who searched for this website most likely already knew the

name of the website because they specifically searched for wheels, heels, or pedals. A recommendation to improve the search results of the website is to improve the tags within the site. By including words such as "biking" or "walking" in the tags of the website, visitors could be able to find the WHP website through searching with less ambiguous words such as "wheels."

**Table 5: Top Five Search Keywords in Sept 2013**

<b>Keywords</b>	<b>Counts</b>	<b>% of keywords</b>
wheels	7	14.2%
heels	5	10.2%
pedals	5	10.2%
www.wheelsheelsandpedals.com	4	8.1%
and	4	8.1%

## 4.2 Analyzing the Content Needed Updating

### 4.2.1 Discovering Points of Interests

To better understand points of interest on Nantucket, we rode our bikes to explore several well-known bike paths, and then we took a personal bike tour with Jason Bridges to discover classic and hard-to-find spots. We also interviewed Kate Hamilton and David Sharpe from Nantucket Visitor Service to gain interesting tourist information that we could not find by ourselves. By understanding the points of interest on the island, we were able to analyze the needs of visitors that come to the island.

We rode over 50 miles on the paths the first week and took notice of which ones were more enjoyable than others and which paths had interesting destinations along the way. After we had experienced the various bike paths on Nantucket, we reflected on which ones would be most suitable to highlight on the new WHP website. We then discussed with our sponsors what specific points of interest were along each path and how to make the information of interests available and interactive on the new WHP website. For example, a bike path could be featured in a video that highlights the various points of interest along the way.

We took a bike tour as a group with a personal guide, Jason Bridges. Jason owns a bike tour company on the island, and knows Nantucket very well. During the tour we rode to areas of interesting historical value, such as the original houses that the

first families of Nantucket lived in. The historic stories and facts we learned from Jason were valuable pieces of information we could include on the new WHP website. To attract the most number of visitors, we want our website to include information on a wide range of topics. Some visitors might prefer history while others might prefer nature or shopping on Nantucket.

Apart from biking, we interviewed Kate Hamilton and David Sharpe of Visitor Services to find other possible information that tourists were interested in. David made up an informational packet of the biking loop that included the Milestone path and Polpis path (Appendix A). The packet included multiple points of interest that were of importance to Nantucket. An example from the packet was the "Pi" mile marker on the Milestone bike path as seen in Figure 18.



**Figure 18: Pi Mile Marker on Milestone Road**

[http://commons.wikimedia.org/wiki/File:Pi\\_Milestone\\_on\\_Milestone\\_Road,\\_Nantucket\\_MA.jpg](http://commons.wikimedia.org/wiki/File:Pi_Milestone_on_Milestone_Road,_Nantucket_MA.jpg)

The Pi marker is a humorous and unique feature of the Milestone bike path. This tourist attraction and others that we learned about from our interviews with Visitor Services would help us figure out what new content to include in the Pedals section of the WHP website.

#### 4.2.2 Designing Maps on the New WHP Website

A well designed mapping service should be considered as one of the more important web page content items incorporated into the new WHP website. From the focus group meeting, we discussed the following ideas for designing maps.

Harvey Young as the owner of Young’s Bicycle Shop developed his own paper map of the bike trails on the island, which is well known and highly regarded in Nantucket. He explained that he believed his map became popular because it was easy to use and relatively simple in its format and layout. His map only has a single purpose, which is to show where the bike paths are without extra pictures or unnecessary symbols. The map on the new WHP website should have the same functionality as Young’s map.

The maps on the new WHP website should also contain multiple layers which display different topics of tourist attractions. For example, one layer could include restaurants. Ideally, visitors would have the options to show which layers they wanted to see on the map.

In order to display the location of different attractions on the map, we recommend using pins or tags that represent the points of interest. Pins of the same color would imply they were of the same topic.

#### 4.3 Exploring the Technologies for Building New WHP Website

To build the new WHP website at a low cost, Tihomir Ivanov introduced us to several free web design tools. Table 6 lists the details of some of the technologies and tools he mentioned.

**Table 6: Tools Introduced by Tihomir Ivanov**

Name	Description
OpenStreetMap <sup>16</sup>	A free open data editable world map
MapBox <sup>17</sup>	An open platform for making custom maps based on OpenStreetMap
GitHub <sup>18</sup>	A web-based hosting service with both free and paid plans

<sup>16</sup> <http://www.openstreetmap.org/about> OpenStreetMap About Page

<sup>17</sup> <https://www.mapbox.com/> MapBox Home Page

<sup>18</sup> <https://github.com/> GitHub Home Page

MODX <sup>19</sup>	A free open source content management framework system
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Since people will browse the WHP website via various devices such as laptops, mobile phones, and tablets, the new WHP website should be appropriately viewed through these devices. Tihomir Ivanov introduced “responsive web design,” which incorporates various web technologies that solve cross-device compatibility issues. Implementing responsive web design provides an optimal viewing experience—easy reading and navigation with a minimum of resizing, panning, and scrolling—across a wide range of devices<sup>20</sup>.

#### 4.4 Designing a prototype for the new website

We discussed with Tihomir Ivanov the best options available for the creation of a webpage prototype, ultimately selecting the website Wix<sup>21</sup>, a cloud-based web development platform that enables users to create professional websites. Since we did not have web development experience, using Wix appeared to be the easiest way for us to create a basic prototype. We simply needed something to get our ideas down of what to include in the new WHP website. We kept the elements that we liked from the old site, and brought them into the new design.

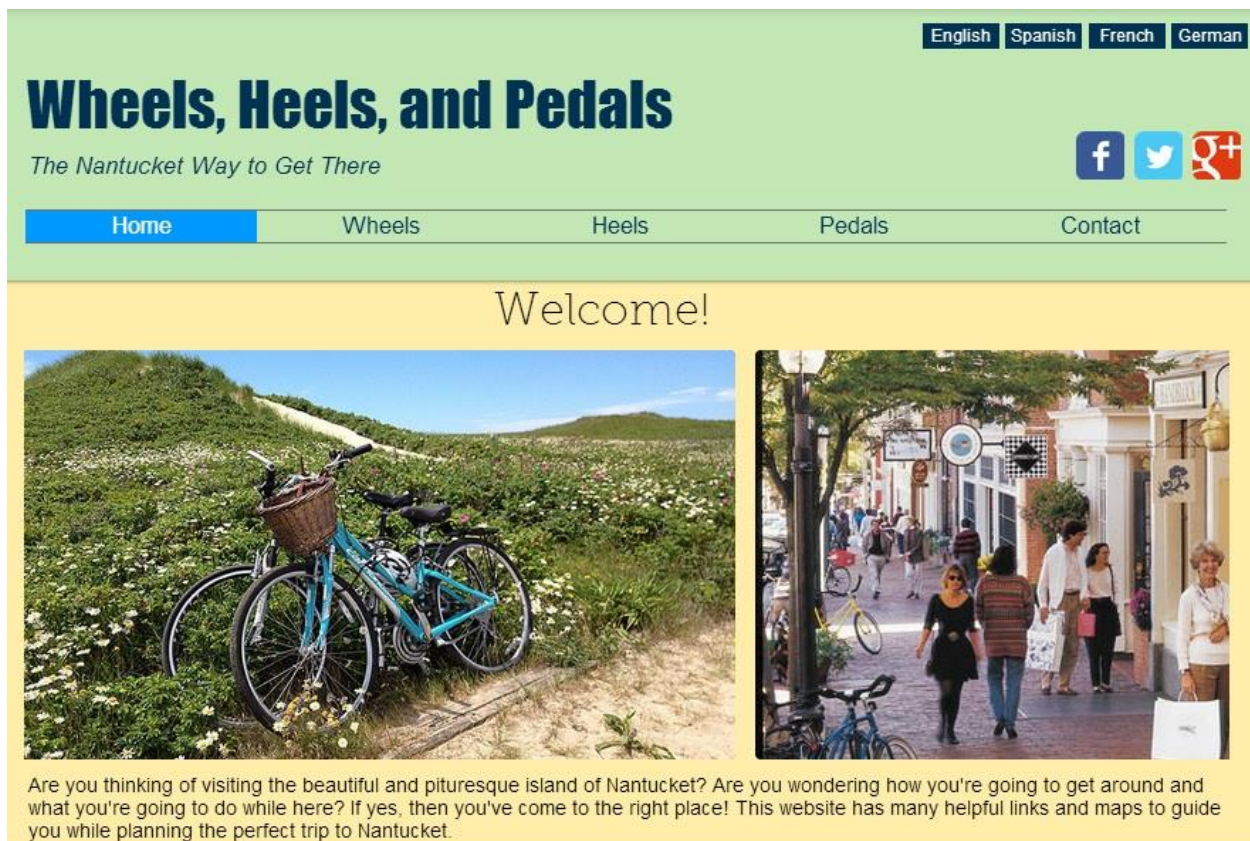
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<sup>19</sup> <http://modx.com/> MODX Home Page

<sup>20</sup> Marcotte, Ethan (May 25, 2010). "[Responsive Web design](#)"

<sup>21</sup> <http://www.wix.com/> WIX Home Page



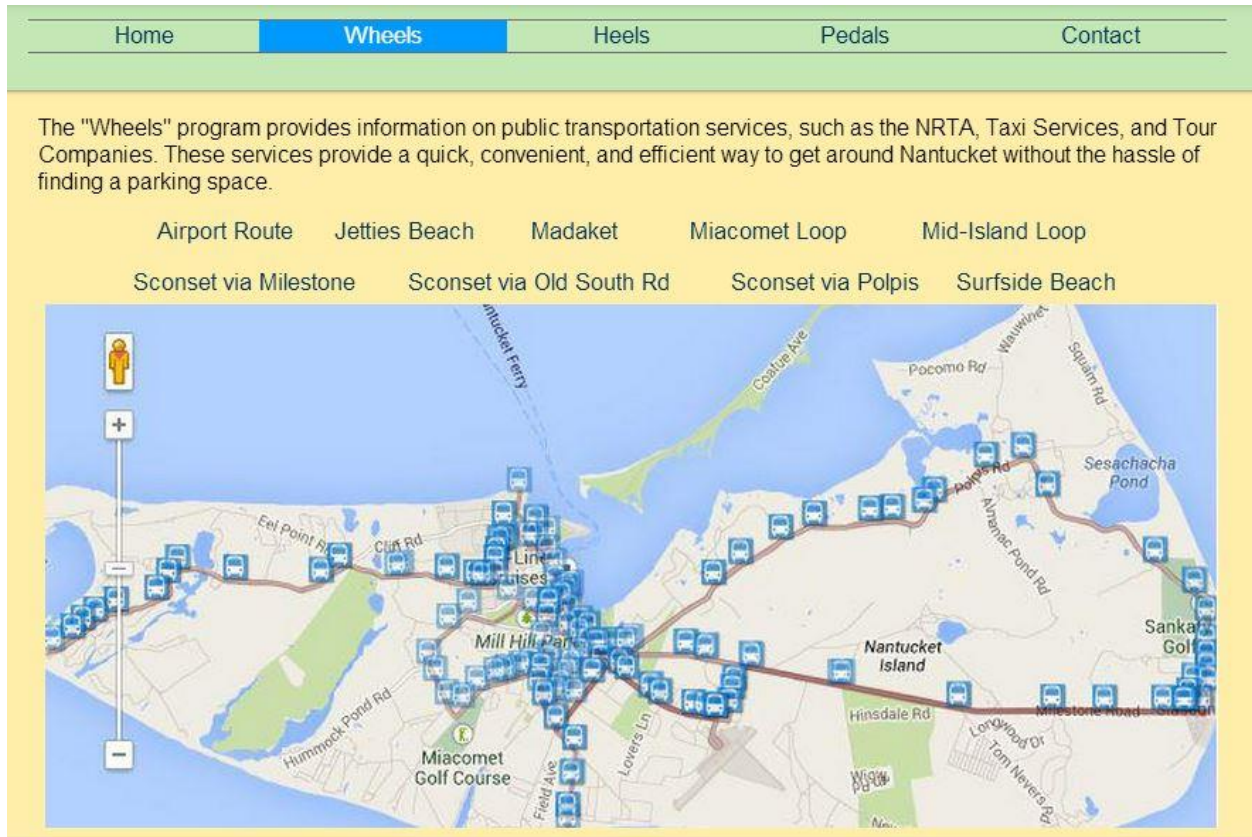


**Figure 19: Prototype WHP Home Page**

We separated the website prototype into the three main words of its title: wheels, heels and pedals. This helped reduce confusion of multiple unnecessary sections and information scattered around the webpage. Separating the site like this also allows visitors to easily choose one mode of alternative transportation and see all the available related information. The home page, of our prototype, seen in Figure 19, features a picture slide show emphasizing biking, walking, and public transit. It also has high definition pictures of various tourist attractions like the Whaling Museum and a beach sunset. This slide show could easily be updated to highlight different major island events. For example, during December it could feature pictures of Christmas Stroll.

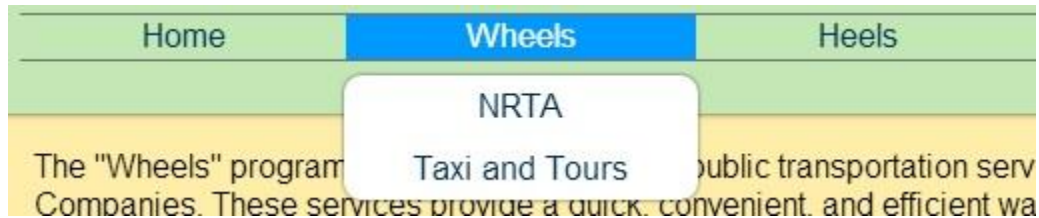
The welcome message on the homepage reads like this, "Welcome! Are you thinking of visiting the beautiful and picturesque island of Nantucket? Are you wondering how you're going to get around and what you're going to do while here? If yes, then you've come to the right place! This website has many helpful links and maps to guide you while planning the perfect trip to

Nantucket." It then goes on to explain that "wheels" refers to public transit on the island, "heels" refers to walking, and "pedals" refers to biking.



**Figure 20: Prototype WHP Wheels Page**

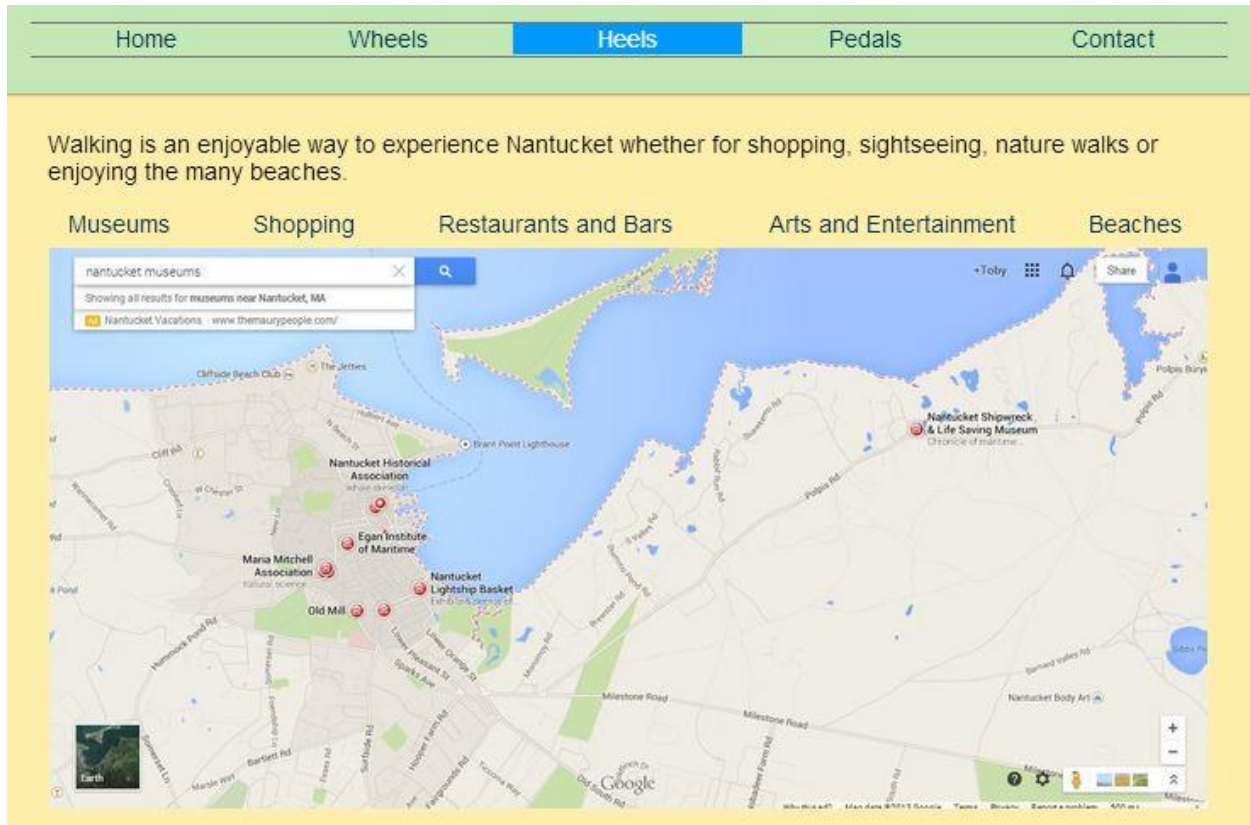
Information for the Wheels tab, as seen in Figure 20, includes the different bus routes on an interactive map. We transferred the information for this tab from the current WHP website and organized it in an understandable format. We included the NRTA and taxi information as drop down options from the Wheels tab as seen in Figure 21.



**Figure 21: Prototype WHP Wheels Drop Down Menu**

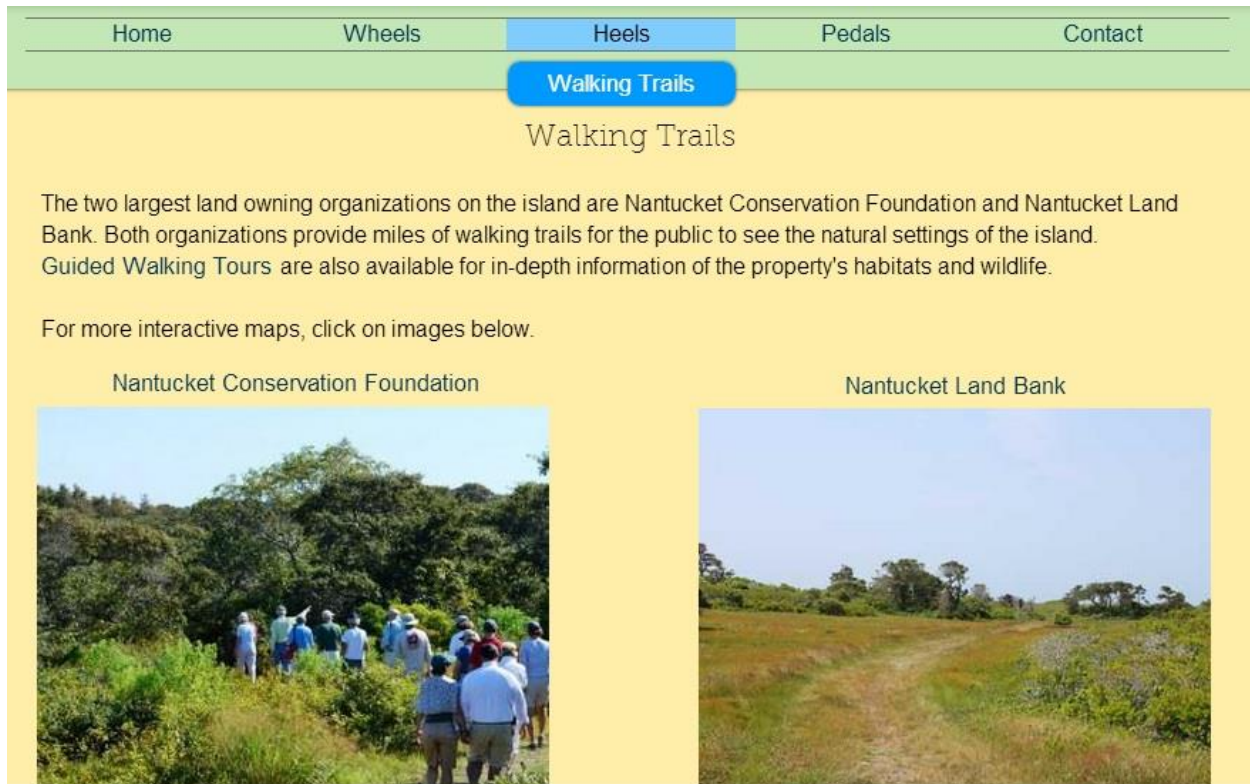
The Heels page incorporates the many attractions available for visitors to walk to. For example, there are multiple museums, restaurants, and shops accessible by walking in

downtown. Figure 22 displays the interactive way visitors can choose what is available to walk to. By simply clicking on, for example, museums the map brings up all museums in the area.



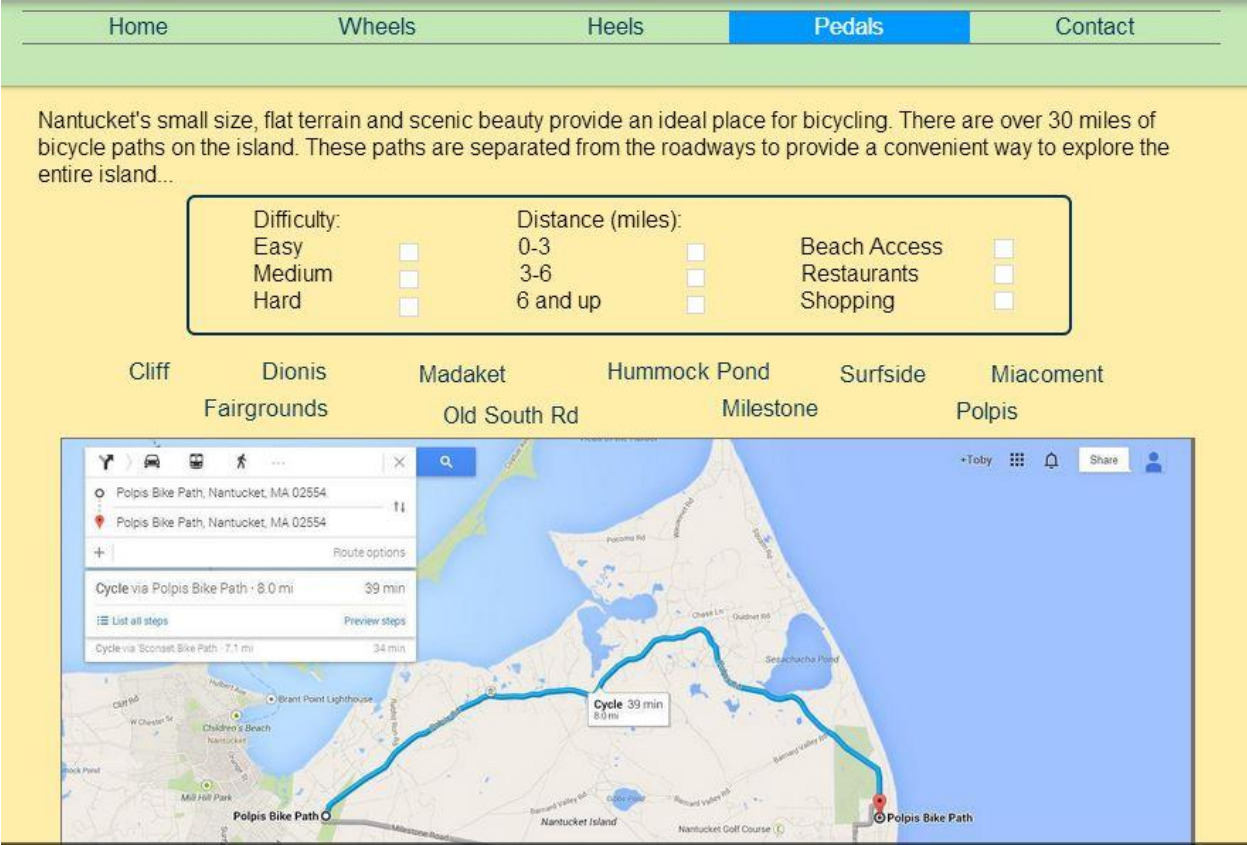
**Figure 22: Prototype WHP Heels Page**

The drop down page from the Heels tab is Walking Trails as seen in Figure 23. We incorporated two of the main land owning organizations on the island: the Nantucket Conservation Foundation and the Nantucket Land Bank. Both organizations have walking trails on their plots of land that are open to the public. The Walking Trails page on the new WHP will provide external links to the websites of both of these organizations that give descriptive maps of the trails. Another provided external link is *Guided Walking Tours* that directs visitors to a page on the Nantucket Conservation Foundation with more information on tours of protected land.



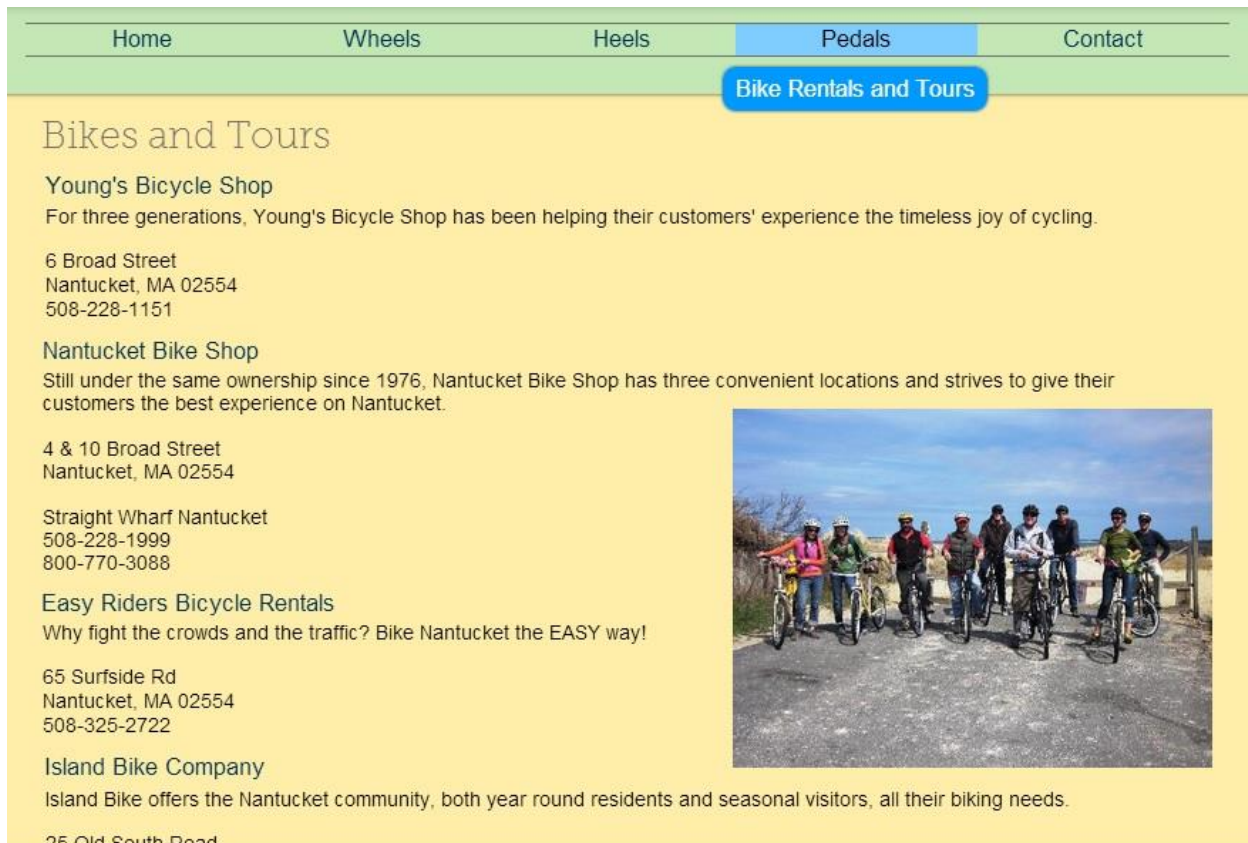
**Figure 23: Prototype WHP Walking Trails Page**

We included all the information about the biking opportunities on Nantucket in the Pedals page as seen in Figure 24. Using Google maps, all bike paths are shown on the island. The map is interactive that uses filters to allow visitors to customize what kind of bike ride they prefer. For example, some filters we included were difficulty, distance, beach access, restaurants, and shopping. If a family wanted to go on a short ride, they could choose *Easy* for difficulty and *0-3 miles* for distance. The map would then display options of a bike path. Also, below the map we recommend mentioning a short description of the path and the attractions are along the path.



**Figure 24: Prototype WHP Wheels Page**

The drop down page from the Wheels tab displays the various biking companies that visitors can rent bikes from as seen in Figure 25. This information is important to consider for tourists that want to bike but do not want to bring their own bikes to the island. This page also features Nantucket By Bike Tours, the bike tour company owned by Jason Bridges.



**Figure 25: Prototype WHP Bike Rentals and Tours Page**

By integrating drop-down pages on the menu of the website, the information provided is organized and clear. Making information accessible was a key aspect to our prototype. The overall flow and look was important for us to consider. We want the new WHP website to attract visitors and to ensure this will happen, an efficient way of presenting information must be created.

Another key idea to engage visitors of the WHP website is incorporating interactive elements. The maps we produced allow tourists to virtually experience traveling on Nantucket without cars.

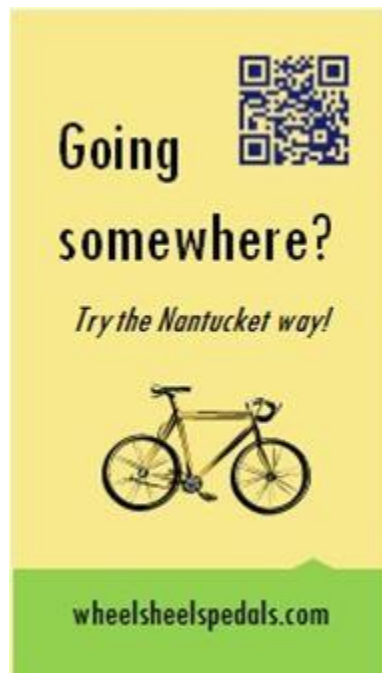
#### 4.5 New WHP Website Marketing

After the prototype for the new WHP website was designed, we needed to find out ways to market the new website. In our focus group, we heard the following ideas:

David Sharpe from Visitor Services suggested creating links to the WHP website on their Visitor Services website. The link could be placed in the part of the website that mentions transportation. Jason Bridges from the Town of Nantucket IT Department introduced the new

“How can I..?” section that would be built in the new town website. The WHP website could provide a link to answer the question, “How can I get around Nantucket without a car?” Rachel Hobart suggested another approach of displaying an advertisement for the new WHP website on the TV of Steamship Authority and Hy-Line ferries. We recommend exploring this advertising approach to determine the costs and whether it would be an effective way to introduce visitors to the WHP website.

Another approach to market the new website is to use business cards with a QR code that lead to the WHP website. We designed a simple business card as you see in Figure 26.



**Figure 26: WHP Business Card with QR code**

An inexpensive and old-fashioned way of marketing is through printed handouts that could be available for visitors to pick up and view when they were on Nantucket. These could be located at the Visitor Services office, bike shops, or ferry ticket offices. Figure 27 displays an example of WHP business cards located in the Visitor Services office.



**Figure 27: WHP Business Cards in Visitor Services**

#### **4.6 Maintenance of the WHP Website**

Since the website's new design should last for a few years with our proposed new format, we wanted to consider ways to update and maintain it at a low cost. Tihomir Ivanov mentioned that there would be a simple way for non-technical people to update the website content. It would be as easy as replacing certain files with new files. Rachel Hobart suggested that a summer internship could be created for updating the WHP website. Mike Burns suggested that the IT Department of the Town of Nantucket help maintain the website, since the Town of Nantucket owns the WHP website.



## 5.0 Recommendations and Conclusion

Our project resulted in a new webpage design that can be incorporated into the old WHP website with a launch expected in the spring of 2014. The changes to the old website were focused on providing information on alternative transportation methods in a more user-friendly way, thus, encouraging visitors to travel on Nantucket without vehicles

Since our project was the first of what is expected to be a multi-year project, we did not accomplish all of the tasks we would have hoped to. For example, the video tour we suggested to promote bicycling and the implementation of QR codes on the island trails were not covered in our final project. Our suggestions and recommendations included the following:

- An important concept for future project groups to incorporate into the website is the use of QR codes. We recommend the use of QR codes to engage tourists while on Nantucket and to further the involvement of the WHP website on the island.
- The idea of a QR code tour around the different bike trails of Nantucket could also inspire more bicycle based tourism by providing information about points of interest without a tour guide. Working with different organizations, we recommend that a future team could create a tour using QR codes that are strategically located around Nantucket to generate a different type of tour experience.
- We recommend that another QR tour be created that would encourage walking around downtown. Using QR codes as “hints” at local attractions in the downtown area, for example the Whaling Museum, a person could be sent to another location where they would find another QR code and so on. Basically, this kind of walking tour could be a fun scavenger hunt that would be suitable for all ages, specifically children.
- We recommend making virtual bike tours on the WHP website that would highlight the different sceneries and attractions around Nantucket from the many bike paths. This would allow visitors of the website to visually experience what biking is like on the island without being in Nantucket.
- Google street view is another way visitors could virtually experience Nantucket. Most of downtown has the ability to be seen through street view. However, for less populated roads such as Polpis Road and Milestone Road, street view is not available. For this idea

to feature the whole island, we recommend reaching out to Google to see if they could have all roads on Nantucket be seen through street view.

- Thousands of people go through Visitors Services during the summer. To help market the website, we recommend having a computer monitor set up in the office for tourists to view. This way they can get their questions answered about transportation on the island if people behind the desk are busy with other visitors
- We recommend that the analytics of the website be monitored more carefully, especially after the launch of the new website and more efficient marketing techniques are used. This could provide valuable information about an increase in the popularity of the site.
- Since we were not here on the island during its peak season, we were not able to directly ask visitors what they thought was valuable information to include on the website. We recommend supplying a survey on the new website. This way our sponsors can realistically see what the wants and needs of visitors using the website are. This survey would be implemented during the summer months when the most visitors come to Nantucket.

Implementing our recommendations would add significant value to the WHP website.

The mentioned ideas are recommendations resulting from our project interviews and focus group, which we were not able to further develop during our time working on this project. Future groups working on the website can incorporate these ideas into their projects, and hopefully succeed helping to further the livelihood and mission of the Wheels, Heels, and Pedals website.

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## **APPENDIX A: QR CODE TOUR: ‘SCONSET AND POLPIS BIKE PATHS**

The following information of points of interests for a QR tour was provided by David Sharpe<sup>22</sup> of Visitor Services. The QR Codes would be at these points of interests and when a visitor scans the code, information about the certain point of interest will show. The example tour would start at the Rotary by Milestone Road and would make a loop via Milestone and Polpis Roads.

### **Start near Rotary:**

The Milestone or the ‘Sconset Bike Path was the first bike path built on the island. The Milestone Road is the only “state” road on the island. All other streets and roads are Town/County of Nantucket owned.

Prior to 1918, cars were banned from the island roads, however, Clinton Folger got around the ban. When he brought his car over on the steamer, a team of horses would tow his car from the steamship dock out to the beginning of the state road where he would start the engine and drive down the road.

### **At the entrance to the Wannacomet Water Company:**

Nantucket has its own source of fresh drinking water created by the retreating glaciers 12,000-14,000 years ago. Water is drawn from an aquifer that sits below the island. Ground water filters down through sand and clay. The clay prevents sea water from invading the “lens.” Most importantly, Nantucket does not add chlorine or any other additives to the water supply.

### **Bike Crossing:**

A bicyclist can continue on the Milestone Road or turn left and through the woods to the Polpis Road Bike Path. Either route will lead you back to this spot.

### **The Pi Milestone:**

Someone has a good sense of humor as a white painted stone shows that a visitor is 3.14 miles from town.

### **Glide Path Corridor at Corner of Milestone and New South Roads:**

This corridor leads to the Instrument Landing System (ILS) for Runway 24 at the Nantucket Memorial Airport. Built in 1943 by the U.S. Navy, the Town of Nantucket took over in 1946. Nantucket Airport’s three letter code is A-C-K. It is the second busiest airport in New England during July and August behind Boston Logan Airport.

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<sup>22</sup> Reprinted by permission from the author, David Sharpe, [DSharpe@nantucket-ma.gov](mailto:DSharpe@nantucket-ma.gov) 18 Dec. 2013

**Larsen Acres Sign:**

Nantucket has roughly 40-45% undeveloped land. In 1963, the Nantucket Conservation Foundation (NCF) came into being and over the last 50 years NCF and other island conservation organizations have ensured that these lands are protected and will not be built upon in perpetuity.

**Across from the split rail fences overlooking the “Serengeti” approximately 4.5 – 4.75 miles from Town:**

The NCF keeps the underbrush cut short in order to help the Harrier (Marsh) Hawk find its prey of mice, rabbits and other small animals. As a result, the locals often refer to the view as the Serengeti in deference to the real one in East Africa.

**At the Tom Nevers Road Turnoff:**

Tom Nevers was the English name of an Indian who was hired in the late 1600s by the English settlers to look for whales while standing on the bluffs overlooking the ocean on the southeast corner of the island.

**At the 5<sup>th</sup> Milestone – Parking lot that overlooks the Cranberry Bog:**

To the North – Northeast, the Milestone Cranberry Bog is one of the largest bogs in North America. Each fall, the bog is harvested. There is a Cranberry Festival Saturday during the Columbus Day Holiday weekend.

**‘Sconset Golf Course:**

Built in 1894, this is the oldest continually used public golf course in the United States.

**At the New Lane Intersection:**

At the top of the small hill up the street, in 1901, a Marconi Wireless station was opened near this spot. In 1909, the station assisted in rescuing the passengers and crew of the S.S. Republic 60 miles south of Nantucket by alerting nearby ships. The Republic had been rammer by the S.S. Florida in dense fog.

**At the 7.5 Milestone:**

The visitor is in the heart of ‘Sconset Village. Originally a seasonal fishing village, ‘Sconset became a summer resort for New York City Broadway actors in the mid-1880s. It was a place to get away from the summer heat. Across the street, the ‘Sconset Casino was built in 1900 to hold performances while they were here.



There are three post offices on Nantucket. One of them is here in ‘Sconset at the rotary. The ‘Sconset Zip Code is 02564.

Just down the hill under the footbridge is Codfish Park, the beach and the Atlantic Ocean. Portugal is 3,000 miles to the East.

To the left of the Rotary is the ‘Sconset market. Go up Shell Street to the New Street intersection where public bathrooms located.

### **Sankaty Head Lighthouse – view from Sankaty Road across the golf course:**

Built in 1850, Sankaty Head light can be seen 24 miles away. To the East and Southeast are dangerous shoals that have caused many shipwrecks. The light flashed every 7.5 seconds.

The lighthouse was moved 405 feet aware from the eroding bluff in 2007. The original Fresnel lens is on display in the lobby of the Whaling Museum.

### **Sasachacha Pond:**

This is the largest “kettle” pond on the island. It is not completely fresh water as the pond is opened to the ocean ever few years to re-circulate the oxygen and nutrients for the fish. On the left side of the pond is the small village of Quidnet.

### **Windswept Cranberry Bog:**

Also owned by the Nantucket Conservation Foundation, Windswept Bog is an organic bog that does not use any chemicals to enhance growth of the cranberries in the bog as well as harvesting does not use the wet mechanical proves common to many cranberry bogs.

### **The Road to Alter Rock:**

The dirt road leads half a mile inland to an unusual looking building. This white, round building with a “bowling pin” in the center is a radio beacon for the Airport to the southeast. 500 feet to the east of the building is Altar Rock, the second highest point on the island at 108 feet. There is no specific Altar Rock but a series of boulders strewn about.

The highest point on the island at 109 feet is Folger Hill about a half mile to the East.

### **The Shipwreck and Lifesaving Museum:**

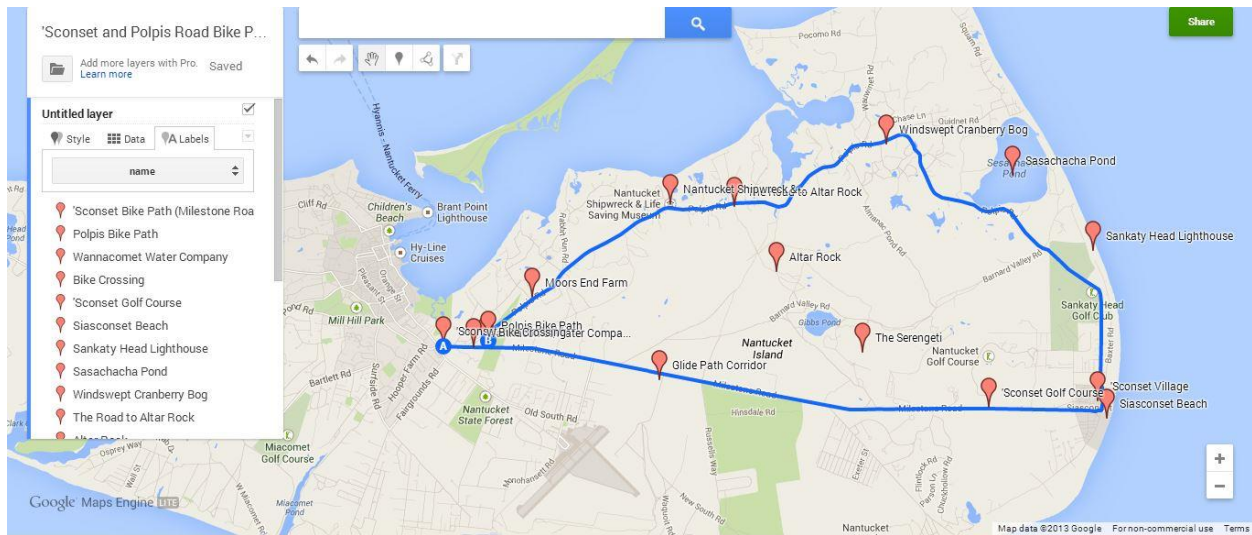
This museum, built in the early 1970s, houses many shipwreck artifacts and lifesaving equipment that were used so much around the island. Also inside, there is a small scale model of the Italian ocean

liner S.S. Andrea Doria which sank 50 miles south of the island after a collision with the M/V Stockholm in heavy fog in July 1956.

On the front lawn is the original lens and cap of the Great Point Lighthouse (1818-1984) which was destroyed in a storm.

**Moors End Farm:**

This farm is one of two working farms on the island.



**Figure 28: Map of QR Code Points of Interest**