Redesigning the Nantucket Town Website

An Interactive Qualifying Project to be submitted to the faculty of Worcester Polytechnic Institute in partial fulfillment of the requirements for the Degree of Bachelor of Science

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ABSTRACT

To enhance the use of e-governance on Nantucket, the Town of Nantucket decided to redesign its town website. The Nantucket IT Department desired a website that allowed users to easily find information and was also easy for town officials to keep up to date. In order to help address both residents' and town employees' needs, the team conducted surveys and a series of department meetings, and also analyzed data from the previous Nantucket Town Website. The project resulted in a list of recommendations on the design, content, and functionalities of the new Nantucket Town Website.

ACKNOWLEDGEMENTS

EXECTUTIVE SUMMARY

Electronic governance (e-governance) is becoming a growing political tool in today's world of technology. Two particular characteristics of the internet – ease of access and cost efficiency – have led many companies as well as government departments to move their communications and data to the internet. The ease of transactions, personalization, usability, and government transparency the internet offers, has led to the rise of e-governance. However, the new online trend must deal with certain issues before it will be able to be used most efficiently. These issues include the security of sensitive data, an inequality in the information flow between a government and its people, and the access inequality that is created by those who do not have a way to utilize the internet.

To remain up to date with the e-governance trend, the Town of Nantucket decided to update their town website. Although the current website was contemporary and efficient at the time of its creation, modern web design had changed so much over the past years that it was simply rendered out of date. Therefore, a new third party vendor, CivicPlus, was chosen for the redesign.

The goal of this project was to make recommendations to improve the Nantucket town website. These recommendations were done by identifying the users of the site, identifying who needs to update the site, and identifying what features are wanted on the site. Some issues with the current website are that it is outdated and difficult to navigate. Through department meetings and surveys, the team determined who will be the primary users of the website and who will be controlling the information available on the website, in order to then get the opinion on what those groups want from the website. We collected information through department meetings with representatives of local government to determine the needs of town departments, and surveys of the local population to determine what features are wanted on the website. This information was used to make recommendations to our sponsor regarding the proper design features to use.

Methods

To understand where we were starting from, the team first analyzed the 2007- 2013 Nantucket Town Website. This was done by creating two different site maps, a navigation based and a URL based one, that showed us the hierarchy of the town website and where that could be improved. We also reviewed the analytics that the current vendor provided us to better understand

how people were using the website. Lastly, the team completed a comprehensive department page analysis that highlighted what was wrong with the department pages on the Nantucket Town Website such as broken links, misplaced information, and navigation difficulties.

In order to understand the opinions and needs from different user groups on the island the team created and distributed two separate surveys. One of the surveys was distributed to the public and the business community on the island. The public sector survey was distributed through a post on the Nantucket Town Website, fliers with a QR code to the survey posted throughout the island, and in-person advertisement on the island. The other survey was sent to the town employees and was distributed by our sponsor Jason Bridges through the town employee e-mail alias. These two surveys were both similar although the town employee survey contained more open ended questions because it dealt with people who are very familiar with the website and use it almost daily.

We met with two prominent departments that had to be included in the website design, Town Administration and Visitor Services. Both of these department's pages contained a lot of information that had to be formatted to fit the "clean-up" model. Therefore, we chose to meet with them so we could ensure any future information that is added, and the information that is currently on their site, is formatted correctly.

Results

From the information that was gathered from our analytics review, surveys, and department meetings we were able to determine the best way to approach the design of the new website. After reviewing and analyzing information on CivicPlus and its modules, we were able to tailor the design approach to CivicPlus' needs and formatting. These results included data on what features were wanted on the homepage and how people wanted the department pages to be utilized. We were also able to see what functionalities were wanted on the website and how we could fit CivicPlus module to meet the desired needs.

Conclusion

Our project presented a rare IQP experience. Whereas most projects work towards a list of recommendations, we worked towards a concrete product, the finished town website. The interaction with the third party vendor, CivicPlus, also made this a unique experience because our

recommendations had to fit the design model they use for all municipal websites. CivicPlus enhanced the project by providing a platform to build recommendations off of. The modules that they offered were used to fit public and government needs.

The island of Nantucket also presented a distinct challenge in designing the municipal website. Nantucket is an island that has a small town atmosphere in the winter and is a vacation hotspot in the summer. The website had to represent and feel like it belonged to a small tight knit community while still not ignoring the thousands of tourists that look to visit the island.

Recommendations

Our recommendations include features that we believe should be on the homepage, the layout of department pages and what CivicPlus modules should be incorporated in the new town website. These recommendations were based off of our survey results, the analysis of the 2007-2013 Nantucket Town Website, and the reviewing of CivicPlus modules. For the homepage we recommended including Calls to Action, a Smart Picture Slideshow, a Calendar, and a Recent News/ Spotlight section. These were all recommended to make the homepage easy to navigate and use in order to increase the percentage of visitors to site that can find their information easily and efficiently.

The department pages recommendations included how we believe the banners should be formatted on either side of the page. From top to bottom we recommend Related Pages then the same Calls to Action found on the homepage in the right banner. For the left banner we recommend top to bottom it contains Contact, Quick Link, and then FAQs. To enhance these department pages and the overall website we also recommended the following modules: Licenses and Permits, Blog, Facilities and Reservations, Notify Me, Report a Concern, Related Pages, Job Postings, and Staff Directory.

AUTHORSHIP

This report was written through the collaboration of the three group members: Matthew Cote, Jon Sorrells, and Yihao Zhou. All three members contributed to every section of the report. Although individual members wrote the initial draft of certain sections, every member read and reviewed each other's work to the point where every section is the cumulative effort of all members. The group also worked in collaboration on all tasks of the project such as the creation of surveys, analysis of the previous website, and meeting with the departments. Likewise, all members worked on slides for the presentations and took part in giving the presentations.

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DEFINITION OF KEY TECHNICAL TERMS

1. **Module:**

   A module is a feature added to a website that allows for ease of navigation or usability, or increasing functionality. A series of modules allows for a completed website with all of the needed functionality in a flowing and user friendly manner. CivicPlus creates their own modules that their clients can use in their website, eliminating any need for HTML coding by the client.

2. **Content Management System:**

   A Content Management System (CMS), such as CivicPlus, allows for modules to be put into the web design that make navigation and usability possible while eliminating the need to code the modules in manually. A CMS also allows publishing, editing and modifying content as well as maintenance from a central interface.

3. **Service:**

   A function performed via the website that is managed by the government, and allows residents to perform some action more easily than performing the same action not using a website. For example, paying taxes online.

4. **Web Analytics:**

   The collection of data about a website, including the number of hits, bounce rate, and other statistics.

5. **Site Map:**

   A list of all the pages on a web site, organized in a hierarchy.

6. **Bounce Rate:**

   "Bounce rate is a measure of the effectiveness of a website in encouraging visitors to continue with their visit. It is expressed as a percentage and represents the proportion of visits that end on the first page of the website that the visitor sees" (Bounce Rate, 2013).

1 INTRODUCTION

Electronic governance (e-governance) is rapidly becoming a cornerstone of governance in today's world of technology and ubiquitous internet access. In the US, President George W. Bush passed the E-government Act of 2002 that pushed federal and local government to move to the more efficient and cost-effective system that is online governance (Jorgensen, 2006). E-governance allows for quick access of information that is very important to a citizen's day-to-day life. Also, online governance helps to build a sense of trust and transparency in the government (Carter, 2012). A study of a municipal government shows it costs 60 times less for a person to use online government websites than for a person to use face-to-face assistance (The Economist, 2008).

In 2012, 1478 data breaches in government websites were reported worldwide, which is up 35% from 2011 (Cole, 2013). Many government websites offer services such as online tax payments and social security information. While it is important that people can easily access these services and information, it is crucial that this information is kept private and secure. In a world of technology, e-governance is a tool that must be utilized because of its efficiency, but it must be done carefully to avoid potential issues.

There are 351 cities or towns in Massachusetts, and under the Home Rule charter, they have a high level of authority and responsibility. The Home Rule charter allows cities and towns to govern themselves by passing local laws. These local governments have this power, so it is important that residents can find information about their local government. 326 of the 351 municipalities in Massachusetts have a town website (2010 eGovernment Awards).

Internet access is widely available on Nantucket. Even if some residents choose to not have internet access at home, the public library in Nantucket offers free Wi-Fi and has computers available to use, so anyone on Nantucket can connect to the internet (Computer, Internet and Wireless Access). Additionally, the entire island has mobile phone service available which can be used to access the internet via a phone even if someone doesn't own a computer. Since internet access is so widely available on Nantucket, a good town website could be very helpful to the community by making it easy for everyone to access desired information.

The town of Nantucket is a small island town with limited resources and funding for its local government. The current town website was launched in 2007. It has not been redesigned

since its launch. The Nantucket IT department is also faced with the problem that technology is constantly changing so the integration of technology is becoming more and more complex, while the physical infrastructure is old in many areas of the island and cannot support the needs of the town (Rhodes, 2011). The Town of Nantucket's IT Department has recently committed to improving its town website, and has started working with a third party to redesign the website. The Content Management System (CMS) CivicPlus was chosen to facilitate the creation of this website.

The goal of this project was to make recommendations to improve the Nantucket town website. These recommendations were done by identifying the users of the site, identifying who needs to update the site, and identifying what features are wanted on the site. Some issues with the current website were that it was outdated and difficult to navigate. Through department meetings and surveys, the team determined who would be the primary users of the website and who would be controlling the information available on the website, in order to then get the opinion on what those groups want from the website. We collected information through department meetings with representatives of local government to determine the needs of town departments, and surveys of the local population to determine what features are wanted on the website. This information was used to make recommendations to our sponsor regarding the proper design features to use. These recommendations were tailored to the third party vendor that the Nantucket IT department has chosen, CivicPlus.

2 BACKGROUND

2.1 E-Government and E-Governance in United States

In this day and age, information technology is widely used in nearly every aspect of society. In June 2010, there were more than 200 million people in the US using the Internet, which is 77.3% of the population (United States Internet Usage, 2011). The Internet provides a simple and fast way for people to access worldwide information as well as communicate with others. By using the Internet, people can do business in the office or even at home with business partners who might be thousands of miles away. Two particular characteristics of the Internet – ease of access and cost efficiency – have led many companies as well as government departments to move their communications and data to the Internet.

The US government realized the potential of the Internet at a very early stage. Use of digital data to store and publish information by the US government can be traced back to 1970 (Jorgensen, 2006). By the late 1990s, the US government was beginning to publish its most current information on the Internet. The beginning of e-government (electronic government) was brought about by the Bush Administration in the early 2000s along with three Acts that regulate the government's online service (Jorgensen, 2006). One of the Acts is Public Law 107-347, the E-Government Act of 2002, which established a Federal Chief Information Officer within the Office of Management and Budget to oversee and encourage all agencies to enhance public services by relaying information through the Internet. This Act indicated how the US government regards Internet as an important way to deliver public services.

2.2 Advantages of e-Government

Kalm (2013: 43) describes how "'E-government' has been a tag that has been applied to the broad field of adapting government functions to electronic communication in order to meet the dual objective of convenience for the citizen and cost savings for the government entity." In addition to the functions mentioned by Kalm, having a municipal website for the local town government promotes community engagement because, on the one hand the website provides a channel for citizens to get involved, while on the other hand citizens are more trusting of a government with a website. In an article published in 2006, Evans-Cowley (2006) identified five standards to assess the quality of government websites: transparency, transactions, connectivity, personalization and usability.

2.2.1 Transparency

In a democratic country like the United States, it is important that the government has a certain level of transparency, meaning that every decision the government makes can be accessed by citizens publicly. Transparency is a fundamental characteristic of a legitimate and effective government (Evans-Cowley, 2006). As Evans-Cowley mentions, opportunity for corruption increases and government's accountability decreases when the government makes decisions in secret. Thus, in order to maintain an accountable government, the government should act as openly and as transparently as possible (Evans-Cowley, 2006). By using the Internet, governments can easily publish every decision they make and receive feedback from citizens directly. It can greatly enhance citizens' capacity to monitor official business and to hold officials accountable for their actions.

An example from China shows how the Internet breaks down the corruption in the government. In 2012, a former province government officer was disclosed to be corrupt by Chinese netizens (network citizens) because a photo of him conducting a rescue operation showed that he was wearing an expensive wrist watch. In a very short time, many photos of him wearing various different luxury watches had been found by netizens and were distributed on social media. Even though this event was purely accidental, it demonstrates the power of Internet supervision.

2.2.2 Transactions

The Internet provides a platform for people to do business and deliver services directly and efficiently. Municipal government websites can also offer so called electronic citizen-to-government (C2G) transactions, which are convenient for both the citizens and the government. However, this service must have a high level of reliability, privacy and security (Evans-Cowley, 2006). For example, some towns such as Nantucket, Provincetown, and Oak Bluffs, allow residents to pay taxes or pay parking tickets online (Nantucket MA; Town of Provincetown; Oak Bluffs).

2.2.3 Personalization

Personalization requires that municipal government websites have the ability for users to customize the interface of the website according to their own needs. In order to do that, websites will "combine use of technology and information to tailor electronic interactions between a business and each individual" (Evans-Cowley, 2006: 80).

2.2.4   Usability

An easy to use municipal government website is able "to motivate citizens to use available e-government resources, to improve citizens' experience in doing so, and to improve the impression that their cities make on interested parties such as entrepreneurs and business executives who can create jobs and move jobs to the community." (Youngblood, 2012).

2.3   Issues Related to e-Government

2.3.1   Security and Privacy issues

Even though municipal governance sites have been widely accepted and used in the US, issues still exist with some of the sites. One important issue is the security and privacy of users' personal data. Citizens who use the website to fill out their tax return electronically or do other online transactions need to fully trust the service provider and the medium through which the data is transmitted (Carter, 2012). As Beldad (2010: 239) says "The risks of having one's personal data misused and abused after being disclosed online for a particular government transaction is not negligible".

To address the concern of online security and to gain trust from the public, some municipal websites provide an online privacy statement for users to read. Although not everyone reads a privacy statement on municipal websites, users trust those municipal websites which provide privacy statements more than those without them (Beldad, 2010). A survey conducted in 2004 indicated that women care more about online privacy than men (Milne and Culnan, 2004). A different study indicates that older users and those not familiar with the Internet are more likely to consult privacy statements than younger users (Beldad, 2010). The same study showed people with low education are more likely to read privacy statements than their counterparts (Beldad, 2010). Besides that, as Carter mentioned in his paper, perceived reputation, perceived risk and trust of the government will have a significant impact on e-government usage (Carter, 2012).

2.3.2   Asymmetry

On municipal websites there is a gap between the large amount of information output from the government and the small amount of feedback received from the public. The government prefers to control the information published on the website, because in a complex political environment, it is easier to maintain legitimacy by carefully controlling outputs rather than by responding to a new set of inputs (Rosenbaum, 2011). A national study of municipal police

websites, for example, points out that police agencies like to publish information rather than receive information from the community (Rosenbaum, 2011). A lack of feedback from the public could lead to lost trust from the public and a lack of democracy.

2.3.3   Access Inequality

Even though the majority of the public receives benefits from using municipal websites, there are people who are not capable or have difficulty accessing the Internet. Two of those groups are low-income citizens and minorities. In fact, these groups have more frequent contact with the municipal government than other groups, but are the least likely to have access to the Internet (Rosenbaum, 2011). Another group which may not benefit as much from online government is the disabled community. For example, blind people need additional tools to be able to use a website, which most government websites do not provide. According to Section 508 of the Rehabilitation Act, the U.S. federal government mandates that government websites be accessible to users with disabilities.

2.4   Demographics of Nantucket

According to the US Census 2012 estimates, the town of Nantucket had a population of about 10,000 people. 21.1% are under 18 years old, and 13.2% are over 65. 93.1% of the population has graduated from highschool (Nantucket County, 2012). The per capita income (average yearly income before taxes) in Nantucket is $53,410, which is much higher than the Massachusetts average of $33,966 (Nantucket County, 2012). So far in the third quarter of 2013, the average price of homes sold in Nantucket has been $925,000, which is much higher than the Massachusetts average of $330,000 (Massachusetts Home Prices).

There are two main Internet Service Providers on Nantucket: Comcast and Verizon. They both cover the majority of the island, and 99.9% of residents live in an area that is covered by at least one of them (Massachusetts - Nantucket, 2012). This does not mean that 99.9% of residents have internet access, just that they could buy access if they want to. Even if some do not have internet access at home, the public library in Nantucket offers free Wi-Fi, and also has computers available to use, so anyone on Nantucket can connect to the internet (Computer, Internet and Wireless Access).

2.5   User Defined Web Design

For this project, the team determined the web features and tools that the various users and stakeholders on the island of Nantucket need. To accomplish this goal the team utilized a user based design approach. The formal definition of user defined web design is given by UX Design, a top researcher in defining and utilizing user based web design, and is as follows:

"Web/application design professionals use the term User Experience Design to refer to the judicious application of certain user-centered design practices, a highly contextual design mentality, and use of certain methods and techniques that are applied through process management to produce cohesive, predictable, and desirable effects in a specific person, or persona (archetype comprised of target audience habits and characteristics). All so that the affects produced meet the user's own goals and measures of success and enjoyment, as well as the objectives of the providing organization." – (UX Design, 2007)

The need to understand the user's expectations and thoughts about the website design is becoming more important in today's world because of the popularity and growth in use the internet has experienced. Therefore, the design approach of a website must make the user's perception of importance of features its highest priority if it wishes to conclude with a final product that will be utilized and well received (Zhang, Winter 2001).

2.5.1   Government Website's Needs, Restraints, and Considerations

Research conducted by Ping Zhang and Gisela M. Von Dran in 2001 looked to determine the web design features most important to users in six major website categories (Zhang, Winter 2001). These categories were finance, education, e-commerce, entertainment, medicine, and most relevant for this research, government. This study also gave the five most necessary characteristics for these six categories. For a government website these five characteristics were, in descending order from most to least important, ease of navigation, clear layout of information, up-to-date information, a search tool, and the accuracy of information.

Trends across all six categories included ease of navigation being in the top three for all categories, and clear layout of information was among the top two for all but e-commerce and entertainment, but was still included in those. Finance, medicine, and government all shared very similar lists with all three having three design characteristics shared between them, which were up to date info, accuracy of information, and easy to navigate (Zhang, Fall 2001).

The results of Zhang and Dran's research should be taken into consideration when forming the design intent of the website. With this information the designer can determine what features hold more weight and thus which ones must be at the forefront of the design intent. By utilizing this data, it is easier to determine which features could be cut if budget or time restraints don't allow for every planned feature or characteristic to be added to the website.

Other restraints and considerations while designing a website under the user defined strategy are laid out in Figure 1:
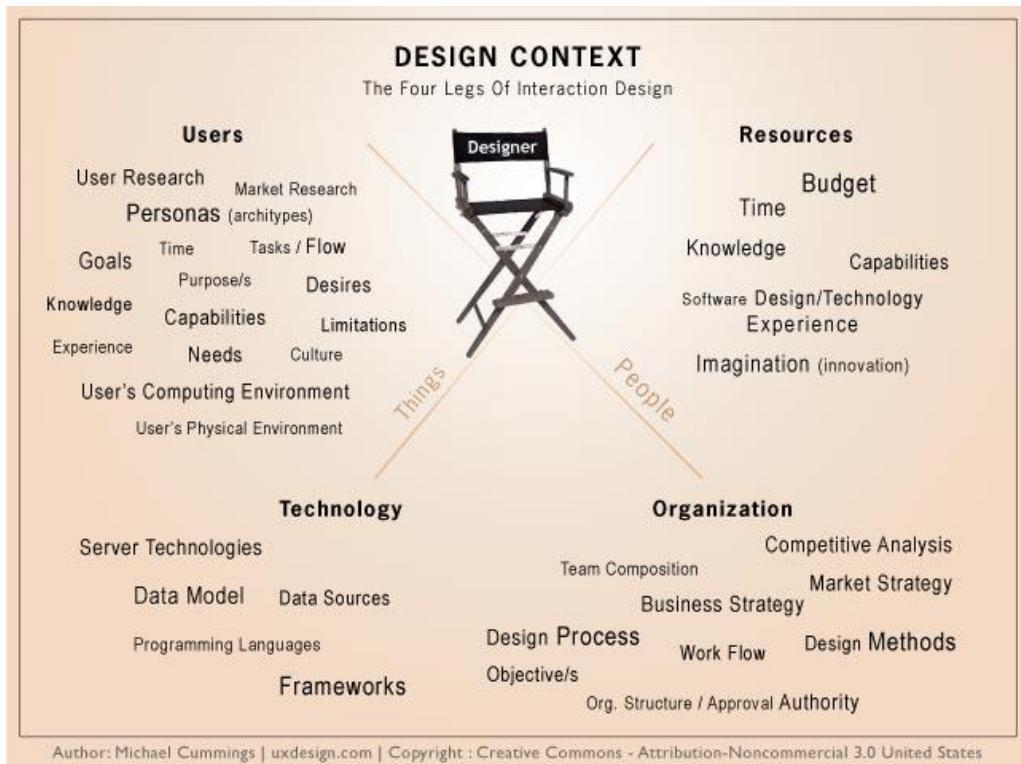
Figure 1 Website Design Restraints And Considerations (UX Design, 2007)

The user should be the main consideration, but the designer is constrained by multiple things that may be out of his control. Budget, time, data models and sources, and design resource are all limiting factors that must be conformed to if the designer is to make a product that the consumer and company/ institution are pleased with (UX Design, 2007).

2.5.2   User Experience

The most important characteristic for a government website as defined by Zhang and Von Dran's study is the ease of navigation. To be able to better understand how users navigate and perceive a website UX Design conducted a study and determined what aspects of a website the user has the most conscious awareness of in a website.
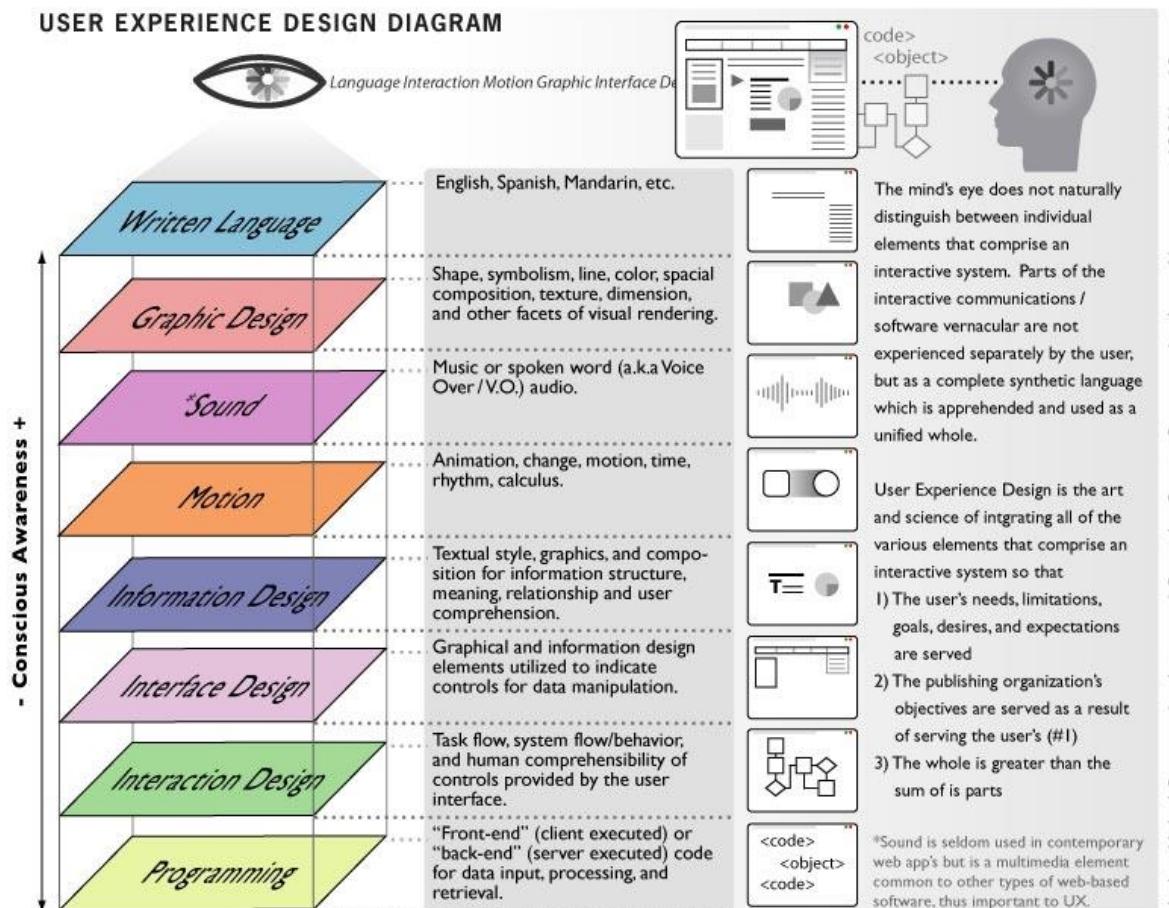
Figure 2 User Web Navigation Data (UX Design, 2007)

The results of this study (see Figure 2) are important for helping the designer understand what should be the prominent and driving features of the web page. Zhang and Von Dran found that ease of navigation of the website and clarity of the information on a government website are crucial components for a user defined web design (Zhang, Fall 2001). By using this information the designer can ensure that the most important part of the website is first noticed.

Graphics on a website that point the user in the correct direction, even if it is something as simple as an arrow to continue to the next page, make the website efficient. Figure 3 shows examples of some web design graphics that could be used for ease of navigation.
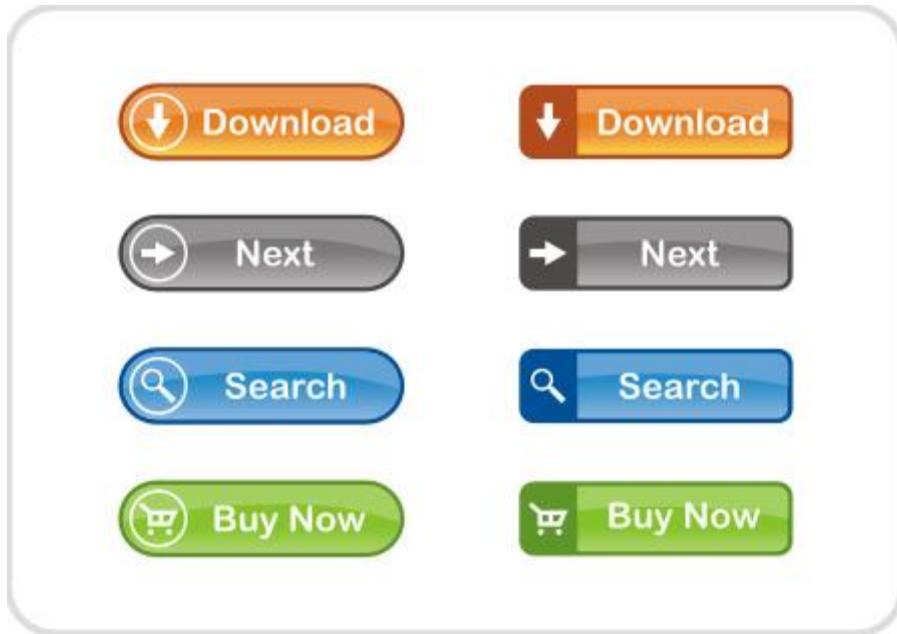
Figure 3 Website Graphics Example (dryicons.com, 2008)

The icons shown in Figure 3 above are attention garnering, prominent graphics features that draw the user to a specific spot on a page immediately.

Another eye drawing, commonly used module, is a smart calendar. The smart calendar allows the web administrator to post dates and times for important events or meetings that are then linked to the event or meeting's own personal pages that can provide a more in depth description and necessary information. An example of this module from the third party vendor CivicPlus can be seen in Figure 4.

Figure 4 Civic Plus Smart Calendar Module

This calendar is a simple way to provide organization and accessibility of meeting and events postings, a very important part of the website. This idea demonstrates the ultimate goal of a user based website - to present all the features and modules in a very clear and professional way that enhances the users' web experience and does not hinder the users' ability to navigate the website.

2.5.3 Combination of Characteristics in Features

The flow throughout a website requires the combination of design intents, features are "stacked" into one another and multiple website characteristics are provided by one feature (Shibu, 2010). An example of utilizing this flow technique is drop- down menus (shown in Figure 5) in a website. Zhang and Von Dran defined the two most important characteristics in a government website as ease of navigation and a clear layout of information. As long as the drop- down menus are done in an organized and logical manner, they present the information in a way that is easy to understand based upon sectioning. With the feature in place it is easy for the user to navigate from menu to sub- menu and efficiently find the information it is searching for.
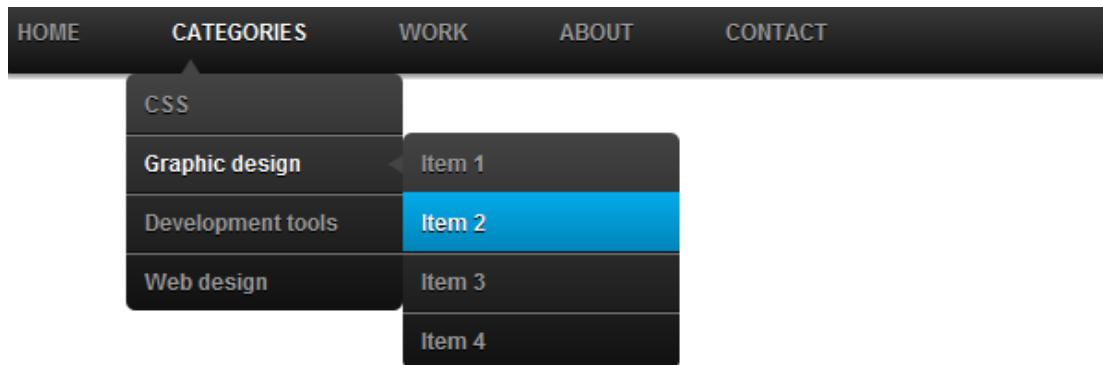
Figure 5 Combination Of Characteristics In Features Example (Red Team Design, 2013)

By utilizing features that combine characteristics the limitations in the design of the website are narrowed. Time, expenses, and labor are all lessened meaning more money and effort can be put into other design features in the website in order to attain all of the intended website characteristics (Shibu, 2010).

2.6 CivicPlus

The Nantucket Information Technology Department has decided to terminate its contract with the current vendor and has selected CivicPlus as the third party vendor for the new town website. CivicPlus is a Kansas based company that specializes in municipal website design and creation. It hosts its own servers and is contracted by a town, city, or state to create and maintain the government's website (About Civic Plus, 2013).

CivicPlus maintains a user friendly reputation by offering its web design service in a series of modules. A module is a feature or characteristic added to a website for ease of use, navigation, and increased functionality. For example, a document center where town employees can post important public documents, and a smart calendar (mentioned in section 2.5.2) that links to event pages are both considered modules. Town departments may choose from a very diverse and expansive set of features that can be used to create a successful website, and no coding is required to use the modules.

2.6.1   CivicPlus Research

CivicPlus sent us a list of documents about modern web design techniques. One of the important techniques for designing a new website is to get rid of The Fold. The term was initially used for newspapers but was adopted into web design. Newspapers are often folded up when delivered and the area above the fold is always the first that that reader sees. When applying to the web design, The Fold is the area that the user can immediately see without scrolling (Cronin 2011). However, now people believe that The Fold technique is no longer applied to the modern web design because Internet users are willing to scroll when browsing the website. Also, because modern display devices have many different sizes and resolutions, for example a tablet device can display webpage in both landscape and portrait, it is impossible to define a common fold for all devices. CivicPlus' research also discusses other techniques such as the "three click rule", the placement of content to the left, etc. that should be considered when designing a new modern website (Chapman 2010). All of these design techniques are meant to design a website that fulfills the five characteristics mentioned in section 2.5.1.

2.6.2   CivicPlus Websites

All of CivicPlus' websites follow a basic formatting technique that is easy to navigate and has a good flow throughout the website. An example of this is the department pages on websites such as Naples, FL and Steamboat Springs, CO. Both of these websites have a Contact Us and Quick Links sections in the right banner, Related Pages in the left banner along with links to call to actions for the major parts of the website, and descriptive text and pictures within the main centered body of the page (Police Department, 2013). An example of this layout can be seen below in the Figure 6, FL Police Department page.
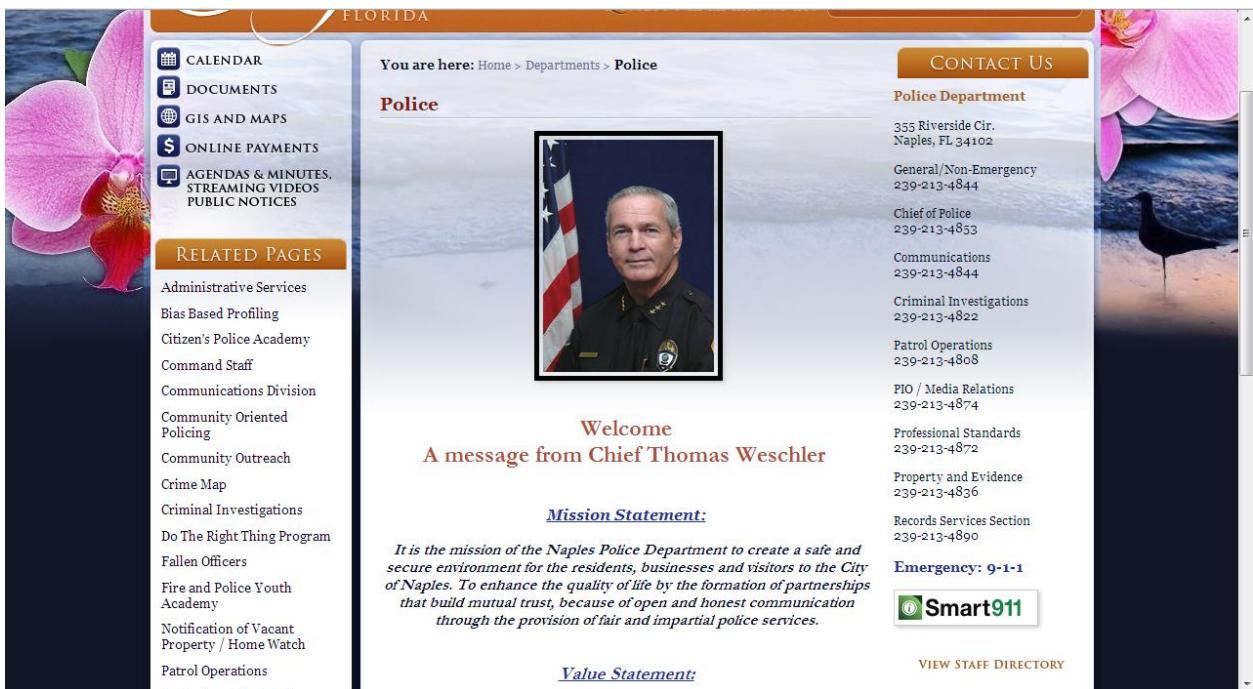
Figure 6 Naples, Fl Police Department Page (Police Department, 2013)

This formatting allows for departments to customize their own pages while also keeping a flow throughout the website that is easy for the user to follow.

2.7 Municipal E-governance Case Studies

There are 351 cities or towns in Massachusetts, and under the Home Rule charter, they have a high level of authority and responsibility. Cities and towns in Massachusetts are allowed to govern themselves by passing local laws. Because these local governments have so much power, it is important that residents can find information about their local government.

Almost all of the local governments in Massachusetts use some form of E-governance, though not all have all the information or services that a resident may want available online. 326 of the 351 municipalities have a town website (2010 eGovernment Awards).

2.7.1 Nantucket Website

The Nantucket website won the 2010 eGovernment Award (2010 eGovernment Awards). This award is given to Massachusetts towns whose websites include certain information:

- Town meeting minutes
- Town meeting agendas

- Budget

- Bylaws

- Archive of past meeting minutes and agendas

- Calendar

- Minutes and agendas for committees

This information, and much more, is somewhere on the town website.

Figure 7 Nantucket Town Website (Nantucket MA)

The current Nantucket town website lacks some of the characteristics important for user friendly websites, such as ease of navigation and clear layout of information, which were mentioned in the section 2.5.1. Figure 10 depicts the 2013 Nantucket Town Website homepage, which contains 38 hyperlinks in the middle of the page, and the additional hyperlinks on either side of the page in the navigation panes. These links are arranged by who they apply to (residents, visitors, etc.), but all the links are always visible, which can make it difficult to navigate the site,

because users are overwhelmed with the number of visible links. The home page also has links to recent events and has a calendar with upcoming events. The page is a fixed width, and looks narrow when viewed on a modern computer monitor. The site offers streaming of meetings that are in progress, and has an archive of previous meetings which can also be watched. However, this service does not work on mobile phones, which are becoming an increasingly popular way to browse the web (Nantucket MA).

2.7.2   Case Study 1 – Provincetown

Figure 11 shows the town website of Provincetown Massachusetts, which has some characteristics from section 2.5, and is created by CivicPlus. The main page of the site is laid out in a logical manner, which allows users to find the information they are looking for, the site has a search tool in the top left corner of the site, a very visible place. Near the top of each page are drop down menus, which show a list of submenus when moused over, as shown in Figure 12. These drop down menus allow for ease of navigation. Some of those submenus have more submenus when moused over, though there is no indication of which ones have submenus until you mouse over and see whether or not a submenu shows up. This site focuses on residents, and links visitors to a separate site, and the link to the visitor site is clearly available on the main page. This site also has a FAQ section for residents, with questions such as what the tax rate is for the current year or where it is ok to dock a personal boat (Town of Provincetown).

Figure 9 Drop Down Menu
(Town of Provincetown)

Figure 8 Provincetown Town Website (Town of Provincetown)

The website has a page for each town department. Each department page has a description of what the department does, contact information including an email and a phone number, the address of the department, and the hours they are open. Most pages also have other information such as a picture, or a text description of a past event or an important notice to residents relating to that department. A picture of a department page can be found in Figure 10.

Figure 10 Department Page from Provincetown (Town of Provincetown)

2.7.3   Case Study 2 – Oak Bluffs

Oak Bluffs' site shares a lot of similarities with Provincetown's website. There are drop down menus across the top, but they have arrows to indicate which elements have submenus, which is beneficial to users, as explained in section 2.5.3. The site also has a few important links on the main page, including recent news and upcoming events. In addition, the content of the site is mainly aimed at residents, while visitors are directed to a separate site (Oak Bluffs).

Figure 11 Oak Bluffs Town Website (Oak Bluffs)

The main difference that stands out between the Nantucket website and the two other town websites reviewed here is the organization of the front page. Nantucket's site has an abundance of links, while the other two have just a few important links and drop down menus to let users find a specific item they are looking for. The department pages on all the sites have similar content; contact information, hours of operation, and important notices for residents. Overall, the content on all the sites is similar, but they differ in looks.

3 METHODOLOGY

shows the organization of our methodology, which will be described in this section.
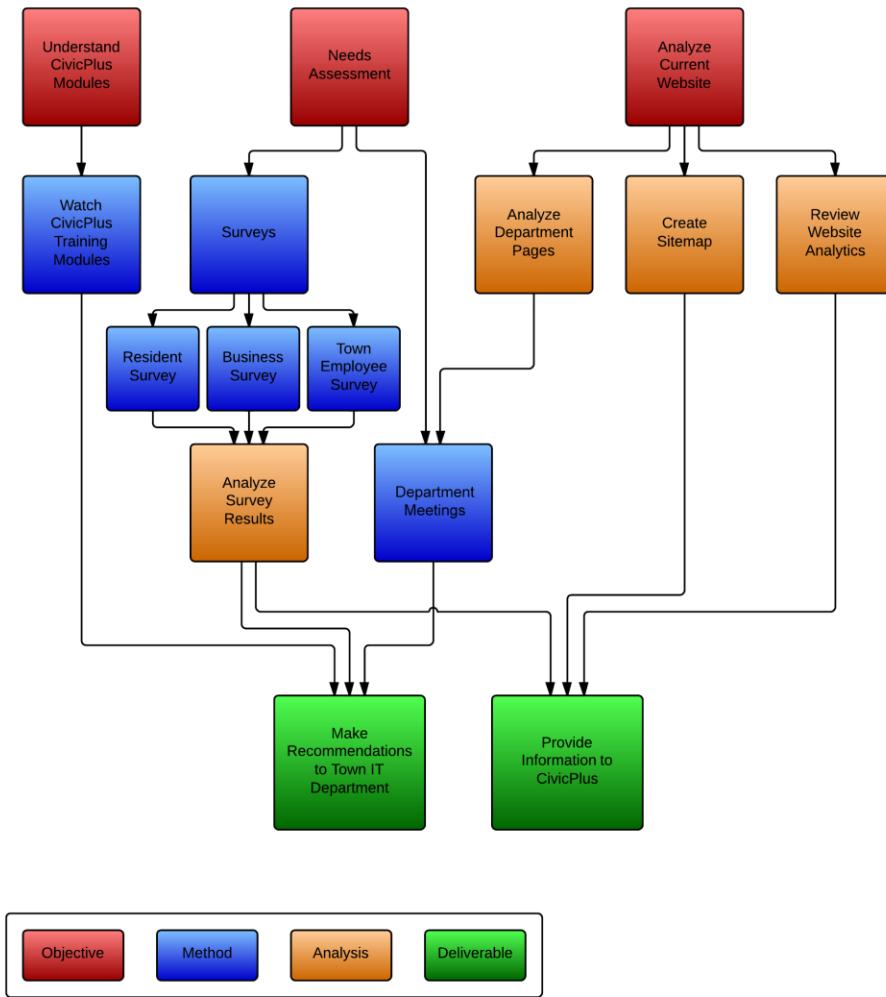
Figure 12 Project Overview Graphic

3.1   Analysis of the 2013 Nantucket Town Website

The analysis of the current town website consisted of three tasks: reviewing website analytics, a site map and a department pages analysis.

3.1.1   Review Website Analytics

These analytics could be found through the previous third party that ran that website. Pageviews, bounce rate, seasonal views, and common search function data could all be found in this service.

This data allowed us to determine a priority list for what must be prominent in the new website. The most viewed pages were documented and used to determine the needed call to actions on the new website and were also used in the process of determining what modules must be included in the new website.

3.1.2   Site Map

To fully understand the Nantucket town website, we created two site maps, namely a navigation based map and a URL-based one.

The navigation based site map was completed by manually going from page to page on the website and formatting a hierarchy in a Document that outlined the entire website. This site map only includes the links on the site that are hyperlinked to another area on the site. The links that lead to external websites were not included. This site map can be seen in Appendix B.

The URL based site map was created using MATLAB, a computer programming language. We exported all of the current town websites URL's from the website analytics discussed to a text file that was then manipulated in the code that we wrote to format the pages in the a hierarchy structure. The code took the exported list of links, and removed all the pdfs and other documents, then sorted the pages and organized them hierarchically. The code can be found in Appendix A. Some manual URL deletion and formatting was needed once the code was finished running but it was minimal. This site map can be found in Appendix C.

3.1.3   Department Pages Analysis

We created a department pages analysis document in Microsoft Excel. CivicPlus formats municipal department pages similarly in all of its websites and this spreadsheet was designed to help fit every department page to this format. Information such as broken links, Related Pages,

Quick Links, and provided contact information were included in this analysis. The spreadsheet was done by manually going to each department, board, and committee page and then filling in the information while also writing a few additional comments.

3.2 Understanding CivicPlus Modules

In order to better understand the different modules offered by CivicPlus, we utilized a service CivicPlus provides to all its customers: CivicPlus University. CivicPlus University is a web based "classroom" that has webinars and training videos on each individual module. In addition, we reviewed recently released CivicPlus website, in order to observe the functionality of the modules on those sites.

3.3 Surveys

3.3.1 Residential Survey

The survey was constructed on the web based survey tool Qualtrics to allow for the easiest form of distribution and collection of data. From this survey we looked for the following information:

- Demographic Information
- Opinion on the current town website
- Design of the new website
- Content included in the new website
- Functionality of the new website

This survey was done through both open and closed questions. Using closed questions allowed us to get the information we were looking for in a concise and quantifiable way. We also included open questions that allowed respondents to give us more in depth answers that would supplement the closed questions and give us a broader understanding of what is wanted from the website. Qualtrics, the web based survey tool, also allowed us to add a heat map question to the survey. This heat map question included a screenshot of the current website's homepage which we then used to ask the respondent what it first noticed when it looked at this homepage. This heat map question allowed us to gain an understanding of what people look for first in a website which would not have been possible without this tool.

3.3.2 Residential Survey Distribution

We used the current town website, social media, paper flyers, and face to face interaction to get as many responses as possible for our residential survey.

To distribute the survey we first utilized the Town News and Notifications function on the current town website. By posting our survey here, anyone who was signed up to receive town news notifications via email received an email about our survey. It is also created a link in the top right corner of the current website that directed users to where they could complete our survey.

We also used social media. Our sponsor, Jason Bridges, is a social media consultant on the island and we used his expertise to help us effectively push the survey out over Facebook and Twitter. We used Jason's Facebook and Twitter, Nantucket Blackbook's Twitter, a trendy social media account on the island, and other Facebook and Twitter accounts around the island to distribute the survey. These social media accounts either sent out the URL to the survey or directed residents to where the survey could be found on the current town website.

We posted paper flyers in locations around Nantucket to publicize our survey. These flyers told residents to look to the current town website for the survey and also included a QR code that would lead residents directly to the survey. This QR code was generated through Qualtrics and then laid out on an eye-catching flyer which can be found in Appendix D

In case someone did not have a QR scanner downloaded to their smartphone we recommended an Android and iPhone app that would allow the viewer to scan the code and complete our survey. These flyers were posted at the two Stop & Shops (one of only two chains on the island), The Bean (a local coffee shop), The Green (another local coffee shop), and The Hub (a board on Main Street where flyers can be placed and is checked often by many residents).

For face to face interactions we set up tables in The Bean with iPads and laptops to solicit people to take our survey. We gave them the option of either taking the survey on an iPad by themselves or have one of us talk them through the survey on our laptops. Talking them through the survey allowed us to pull more information out of them for the open ended questions and also started up conversations that gave another angle to our data.

3.3.3 Business Community Survey

We wanted to obtain information from businesses that interacted with the website frequently and had a large stake in the island. This led us to reach out to insurance agencies, real estate firms, law firms, and architects on the island.

In order to contact the businesses, we sent an e-mail to the office director asking for it to fill out our survey and distribute the survey to the rest of the employees. Each of the 14 e-mails was personalized to the company that it was sent out to. This survey was the same survey used for residents but the responses were analyzed separately. This data was used as its own data set and compared to the data from residents to see the key differences in the business' and residents' opinions.

3.3.4 Town Employee Survey

For town employees, a user group we assumed to be most familiar with the town website, we designed a third survey.

This survey asked for the same information as the resident and business community one while also asking for specific department details such as the frequency in which the department page was updated. There were also questions asking what the town employee would want on their specific department's page which went in accordance with the department analysis discussed in section 3.1.3 to determine specific needs.

To distribute this survey our sponsor sent out an e-mail to the all staff e-mail alias for the island. This did not however reach every town employee. The airport, school, and DMV are all on their own e-mail servers and there are also numerous town employees such as road and construction workers who do not have a town e-mail address. E-mails were sent to these administrators in the hopes they would forward it on to their staff but we believe that our survey reached the e-mails of approximately 150 town employees.

3.4 Department Meetings

Once the surveys were completed the group started the meeting process with specific departments, boards, and committees on the island. These meetings were designed to target departments, boards, and committees whose pages on the current website needed a lot of work in the "clean up" stage of the web design. This "clean up" stage was where the departments had to

organize their personal pages how they wanted them to be transferred to the new website. This included getting rid of unnecessary links, documents, or imbedded text that they would not want on the new website. CivicPlus has a universal format for department pages in all of their websites and we determined how difficult the "clean up" of each department page would be based on how well it fit the CivicPlus model already.

When completing the Department Page Analysis, as discussed in section 3.1, we placed every department, board, and committee into one of three categories. These three categories were:

- No Contact – the page was up to date and easy to transfer to CivicPlus' format
- Contact by Phone/ E-Mail – correct format but there were questions on certain links or the necessity of keeping certain documents
- In Person – the page had many broken links, was extremely unorganized, or belonged to a department, board or committee that we felt we should meet with because of their importance on the island

For the departments, boards, and committees that fell into the In Person category a meeting was set up for a face to face sit down with them to go over the following topics:

- Content Update/ Management
- Department Page Formatting
- Needed Documents and Forms
- Their Questions About New Responsibilities Once Site is Updated

After completing the meetings, we analyzed the data we gathered and established a needs model including what each department uses the website for and what features or functionalities it needs on the website. We then ensured that all department, board, and committee pages were up to date and can be easily transferred to the new website. This data was used to help make our final recommendations for our sponsor.

4 RESULTS AND ANALYSIS

4.1 Analysis of the 2013 Nantucket Town Website

4.1.1 Website Analytics

The current vendor provides website analytics for the current website. This data on pageviews, bounce rates, and other important web analytics can be found in multiple formats including charts and graphs and can also be viewed within any date range. For the purposes of this project we analyzed the data from year to date (December 3, 2013).

From year to date the 2013 Nantucket Town Website has averaged 1803.66 sessions (visits to the site) per day to total 607,832 sessions from year to date. These sessions average 8 minutes and 50 seconds in length and 5.16 pageviews (how many separate pages on the website someone visits during their session). This totals 3,150,803 pageviews from year to date. Figure 16 shows daily sessions on the website from January 1, 2013 to December 3,2013.


Figure 13 Traffic of nantucket-ma.gov in 2013

There is a spike in session per day starting in mid-June and extending through August. This can be explained by those being the summer months when it is school vacation and Nantucket is

at its peak tourism season and people are looking for information such as beach and parking permits as well as accommodations on the island.

Another set of analytics that was reviewed was the Pages & Files section of the analytics website that included information of the most requested pages and downloads of the town website. As is expected the homepage is the most requested page on the website because users are automatically brought to it when they enter the website. After the homepage however the next three most requested pages were all calendars. These three calendars were for the Council of Aging, Department and Boards Meetings, and the Recreation and Activities calendar. The only calendar that is currently being updated frequently is the Department and Boards Meeting Calendar. This shows us that a calendar is essential to the new website and once the new website is launched the calendar must be kept up to date. Likewise, there was similarity at the top of the most downloaded pages section. 4 of the top 6 most downloaded pages from the website were from the Visitor Services page. These 4 pages were all PDF's and included Nantucket Facts, Open Restaurants, Nantucket Visitor Services (NVS) Guide 2013, and Room Availability. These analytics show that many people look at this site for information on accommodations on the island, an indication that Visitor Services should be made more prominent on the new site.

The third analytics category that we analyzed was the websites Navigation. This section highlighted the bounce rates of the website. The website's homepage has a 61.42% bounce rate, which means that for every 100 people that entered the site roughly 61 people did not see what they were looking for or did not want to take the time to find it. Bounces are caused when users enter the website, and then leave without clicking on anything, either because the site was not what they were looking for, or they couldn't readily find the information they wanted.

The current vendor also provided data on the referrals to the town website. A referral is defined as how the user accesses the website. The data shows that 52.81% of the visitors had no referral meaning they accessed the website directly by inputting the URL in their browsers navigation bar. The other 47.19% accessed the site through a search engine or link from another website with the most popular being Google having 36.98% of the referrals. The most common search terms that brought users to the website are: "Nantucket", "Town of Nantucket", "Nantucket MA", "Nantucket Registry of Deeds", and "Nantucket GIS".

4.1.2 Site Map

Through the creation of the two different site maps we discovered problem areas in the website that had to be addressed. The navigation based site map required us to go through and check each link individually and we learned that many of the links on the current town website do not function properly. There were links that were broken and simply displayed a "page could not be found" error and there were also links that were out of date and brought the user to an outside source that said the bookmark must be updated.

We were also able to determine discrepancies in the website's hierarchy that create navigation issues and make information hard to find. One issue is that the Building Department, Health Department, Planning Board, Historic District Commission, and Zoning Board pages are under the Planning and Land Use Services (PLUS) department page. This means that to get to the health department page, one has to first click on Planning and Land User Services, and then click on Health department. Surveys will be talked about in more depth further on in section 4.3 but one finding was multiple people saying, from both town employees' and residents' surveys, that the Health Department was very difficult to find. The reason the site is organized like this is that politically the Health department is a division of PLUS (a chart of the town hierarchy can be found in Figure 17). The organization of the town website should not be the same as the political hierarchy, because users do not necessarily know how the departments are structured.

A problem that the new town website must address was highlighted in the creation of the site maps when viewed with the town hierarchy chart. As can be seen in the top right hand corner of the hierarchy chart there are 4 entities that are separate per the Nantucket Town Charter. These four entities are Nantucket Planning and Economic Commission, Nantucket Public Schools, Nantucket Memorial Airport and the Wannacomet Water Company. Out of these four town entities only the Nantucket Planning and Economic Commission has a page on the 2013 Nantucket Town website while the other three have their own separate websites that are run by their own information group. This creates the task of incorporating these separate websites into the current town website in a flowing and logical manner.
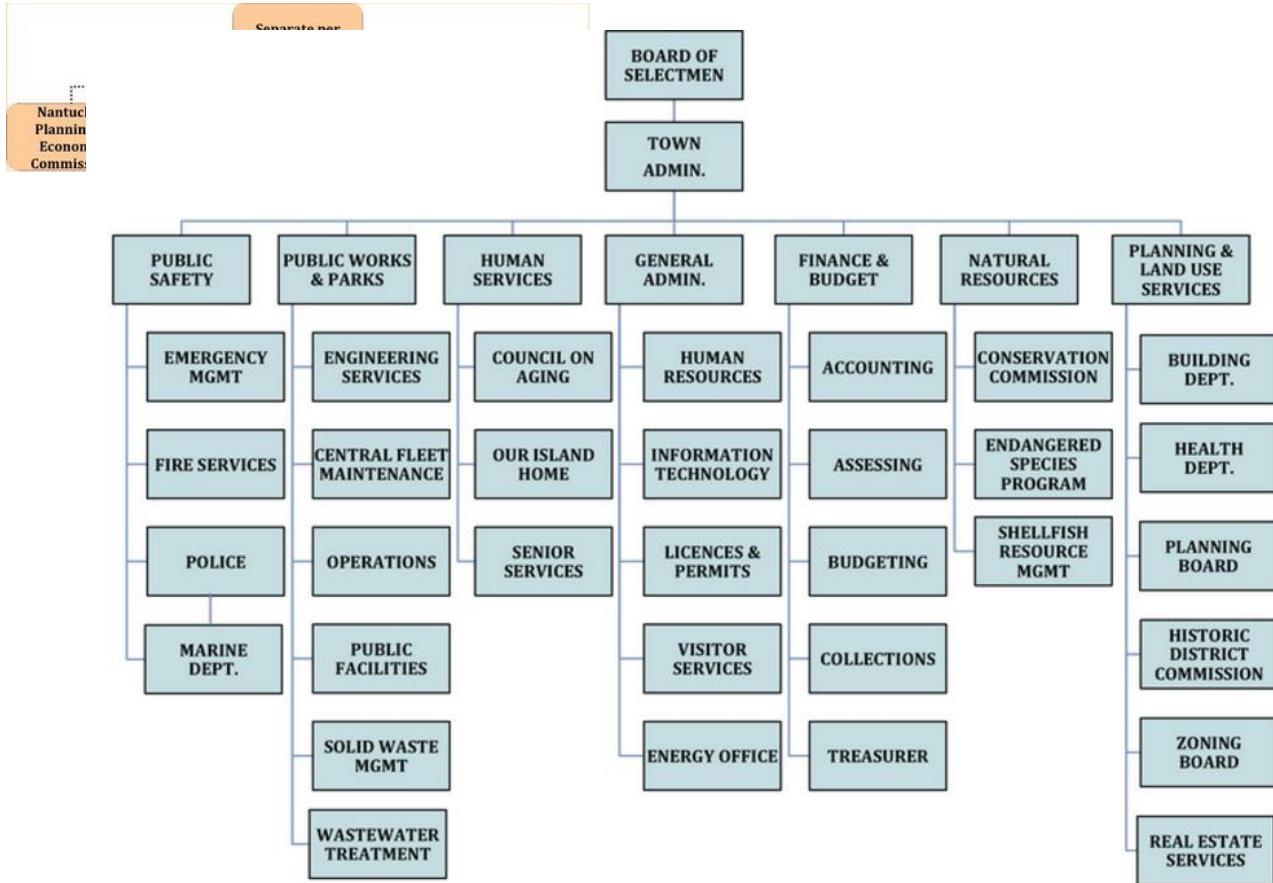
Figure 14 Town of Nantucket Government Hierarchy

4.1.3 Department Pages Analysis

Upon creation of the Department Pages Analysis it was clear which departments, boards, and committees had to be contacted. Our analysis showed that 16 of the departments, boards, and committees needed to be contacted by e-mail, so we decided that the best course of action was to attach our Department Pages Analysis spreadsheet to an e-mail and send it out to every department. Within this e-mail an edited version of a "clean up" guide that CivicPlus website provided was included along with an example department page from a CivicPlus website to show the departments, boards, and committees what the final product will resemble. This e-mail would ask each recipient to make the necessary corrections to their pages such as fixing broken links, taking down unnecessary material, and also adding anything they want on their site before CivicPlus migrated everything to the new website.

There were two departments that we, in accordance with our sponsor Jason Bridges, decided that we should meet with in person. These two departments were Town Administration and Visitor Services.

Town Administration had a good department page but we felt that it was important to meet with them because of their position in the town. We met with them in order to explain what had to be done in the "clean up" process, and so they could provide backing once we asked every other department, board, and committee to "clean up" their page.

Visitor Services contained up to date and quality information on their department page, but the page was formatted unlike any other department page on the website. We met with them in order to make sure we could explain why the formatting for the new website must be consistent through every department page.

4.2   Analysis of CivicPlus Modules

CivicPlus offers a wide variety of modules. In each module, permissions can be set up so that only certain groups can do certain actions. For example, one may set up the calendar module so that everyone can view it, but only department heads may post events.

4.2.1   Bid Postings

CivicPlus provides a simple and easy-to-use module to post and organize town bids, which are required by law to be publicly available. Local Contractors can easily use RFPs and RFQs online to provide products to the community. Users can search and filter bids by category, title or open/closed. The bid posting can work together with Notify Me Module allowing users to be notified when either new bids are coming or their bids have been changed. Users can also sign up through email to receive similar notifications.

To organize bids, town employees are able to sort them by categories. After creating the bid and placing it in the proper category, clicking "save and publish" will add the bid to the Bid Posting center for public viewing. Bids can be in multiple categories by selecting one category and then adding the other in the bid details. If you want to include any documents into the bid, you have to

upload related documents first and then add them to a bid. You can also click on a bid to open the edit mode and make live updates while the bid is posted.

4.2.2   Document Center

The Document Center is a document storage space on CivicPlus' hosting server. By contract, CivicPlus provides 20 gigabytes of space for storing any types of file (PDF, Words, Spreadsheets, Pictures, etc.). CivicPlus provides a structured filing system that allows all the files organized by folders and subfolders. Clients can easily upload the documents to the Document Center and link the file to their homepage. Residents can easily open the Document Center and download the files 24/7.

With the Document Center, clients can organize documents and files by departments or divisions. Departments can provide direct links to important files on their pages to reduce phone calls and become more efficient. Documents can also be modified and replaced in the document center while still keeping the same Document Identification Number making live updating a much easier process.

4.2.3   Quick Links

The Quick Links Module allows users to post related links, either internal or external, to their pages. CivicPlus offers unlimited quick links and each link can be organized by category. Clients can provide links to important information such as documents, forms, or related websites. The Quick Links module also allows users to change the order and placement of Quick Links on a page.

To create a new category, users can go to Quick Links module and select Add Category. In Quick Links Category Detail Tab, you can give this category a name, the start date and end date. Administrators can also set permissions for specific user group to allow them to either view, edit or be in charge of their own category. In the related pages tab, users can add pages and subpages to this category.

To add a quick link, users can go to quick links module and select Add Link. Then, users need to provide the URL and display text for the link. There are multiple options for how the link will be opened by the user such as in a new tab or in a new window.

Once the Quick Links has been published, users can still modify or delete the category and links. Quick Links module has a Live Edit function that allows users to quickly add or delete links on the public side of the module.

4.2.4 Calendar

The CivicPlus premium package integrates a powerful Calendar Module. It allows clients to post upcoming events as well as meetings. The events can be set up as either a one-time meeting or a recurring meeting. The calendar can be displayed on any department pages and can be filtered to only show specific categories. The calendar module also provides Featured Events function that can highlight special upcoming event to draw attention from visitors.

Users can create a new Calendar by simply logging in to an admin account, going to Calendar module and selecting Add Calendar. Users are allowed to title calendars and provide a description of the calendar. There is also a function that allows a front end user to sign up or e-mail notification when a calendar is updated or changed. Administration can also set permissions for different user groups to either view, edit or own the calendar.

To add an event, users simply need to go to the Calendar and click Add Event(s). Each event has two required fields, title and event date. In event data, you can choose the event to be either one-time or recurring. There are many other optional information fields you can provide as well, such as address, time detail, photos and links, etc. Once the Calendar or an event has been saved and published, you can still modify or delete the Calendar or the event.

4.2.5 Agendas & Minutes

CivicPlus provides a powerful, all-inclusive Agenda Center that allows users to manage the whole agenda process from creation to publishing. Agenda Center provides many different agendas and minutes' templates for users to choose. Furthermore, Agenda Center ties in with the Archive Center, a place for storage and retrieval of all the date-driven documents. Users can search and retrieve agendas and minutes from the previous meeting easily.

To open the Agenda Center, go to Modules and select Agenda Center. The main page of Agenda Center provides all the options for you to customize the public side of Agenda Center. You can rename the Agenda Center of your site and also give a Header and Footer for the module. The back end user can also set permissions allowing others to modify agendas or copy agendas to

Archive Center. Default messages can be set for the public to receive as notifications via email or SMS when new agendas are posted.

Before creating agendas, users need to first create agenda categories by clicking Add Category button. A new category has some properties that need to be set up including name, description, and email list. Once creating an Agenda Category, an administrator can assign permissions to different user group, which is the same user permissions system as the other modules.

The Agenda Center provides a default Agenda Format that provides a customizable automatic formatting of the agendas, minutes, and attached documents.

The Agenda Center provides the function to also add minutes into a published agenda once the meeting is completed. Simply click Actions on the agenda and select Add Minutes.

Past Minutes and Agendas can be sent to the Archive Center, which is a place storing all the documents based on time. Click Action on the agenda you want to be archived and select Copy to Archive Center.

4.3 Survey Results

4.3.1 Resident

We received 115 responses to our survey for residents. The survey can be found in Appendix H.

Demographics of respondents are shown in Table 1 and Table 2 and Table 3.

Gender	Responses	%
Male	55	48%
Female	56	49%
No Answer	4	3%

Table 1 Gender of Residents

About half male and half female, as expected.

Age	Responses	%
0-18 years	1	1%
19-40 years	37	32%
41-60 years	45	39%
61+ years	28	24%
No Answer	4	3%

Table 2 Age of Residents

Only one person 18 or below answered our survey, probably because younger people are less likely to be aware of or care about political things.

| Location	Responses	%
Year Round Nantucket Resident	81	70%
Seasonal Nantucket Resident	19	17%
Visitor/ Tourist	9	8%
Other:	3	3%
No Answer	3	3%

Table 3 Residential Status of Residents
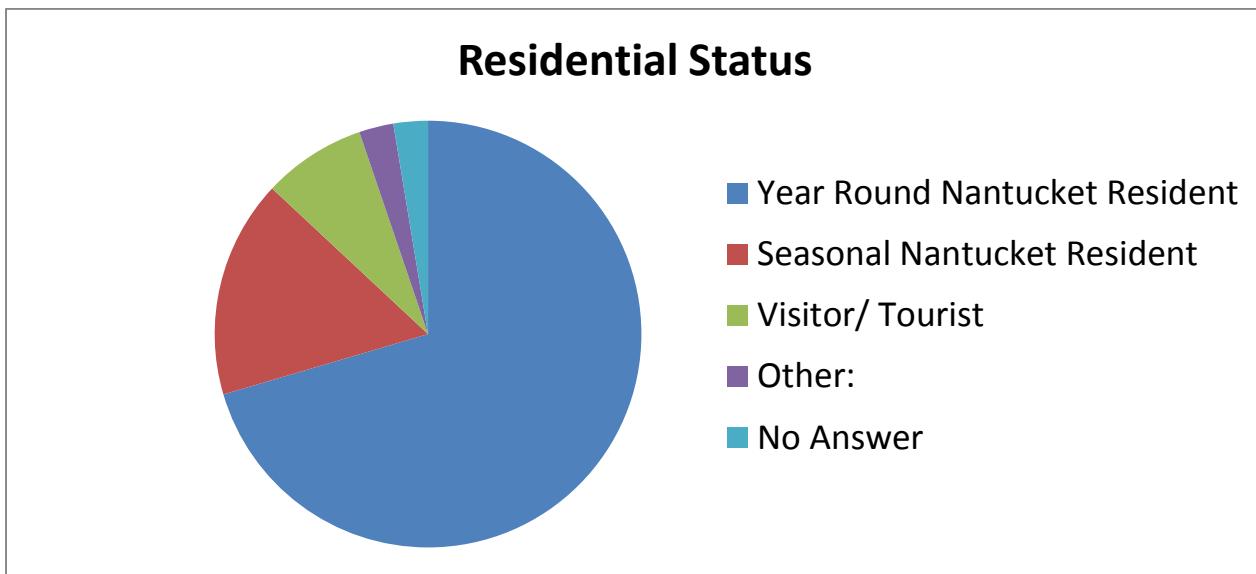
Figure 15 Residential Status of Residents

We were not expecting to get any seasonal residents, figuring they would all be away for this season, and only come in the summer, but we got 19 responses from seasonal residents (see

). For the people who answered "other" and wrote something in, one was a year rounder ("*formerly employed by Town*"), and two were seasonal residents *("3/4 Resident (away for the winter)*" and "*Seasonal Researcher*").

Frequency of using the Town Website is shown in Table 4.

Frequency of use	Responses	%
I didn't know there is a Nantucket town website	5	4%
Never	6	5%
Less than Once a Month	29	25%
Once a Month	15	13%
2-3 Times a Month	21	18%
Once a Week	12	10%
2-3 Times a Week	15	13%
Daily	9	8%
No Answer	3	3%

Table 4 Residents Frequency of using the Town Website

We were surprised at how many people use the town website frequently. None of us check town websites very much, but people who do business in town or care about politics need to check frequently for updates. 88% of those surveyed check the town website at all, and over 20% check it at least once a week. Only 5 respondents didn't know there was a town website, but some of our methods for distributing the survey involved the use of the town website and emailing list, which may have caused some bias.

Opinions on the current Town Website:

Users were asked to rate aspects of the site on a scale from 1 to 5, with 1 being "poor" and 5 being "excellent". The results are shown in Table 5, and averages are shown in Table 6. Graphs of the results for each individual aspect can be found in Figure 16, Figure 17, Figure 18, and Figure 19.

Aspect of Website	Poor	Fair	Good	Very Good	Excellent	No Opinion*
Tools/ Apps (i.e. SeeClickFix, online payments, etc.)	14	26	26	15	1	33
Content (meeting agenda, budget information, etc.)	7	28	32	24	7	17
Look and Feel of the Website	30	40	24	9	2	10
Images found on the website	20	31	26	17	2	19

Table 5 Residents Rating of Current Site

*Respondents who did not select anything for an item were counted along with those who selected "no opinion" for that item.
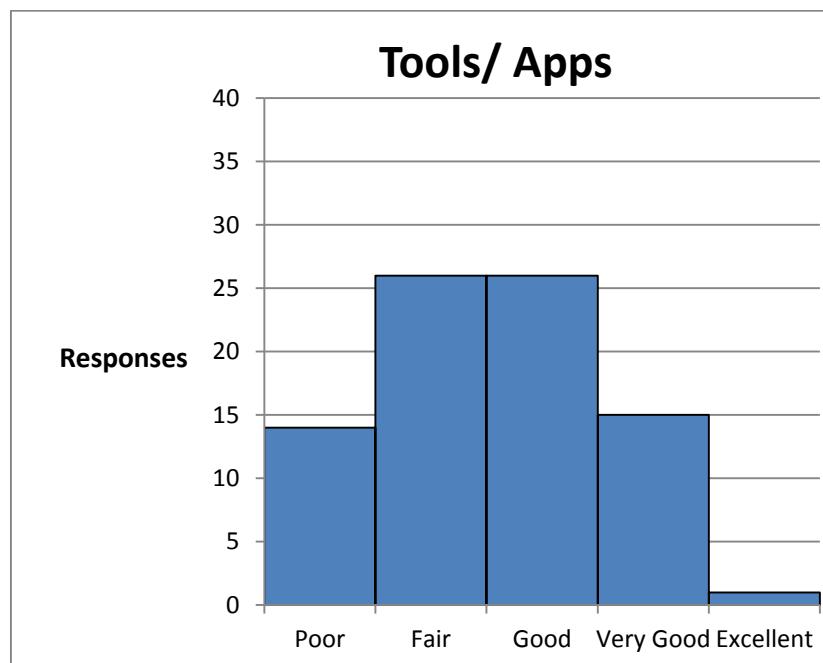

Figure 16 Residents Rating of Tools/Apps
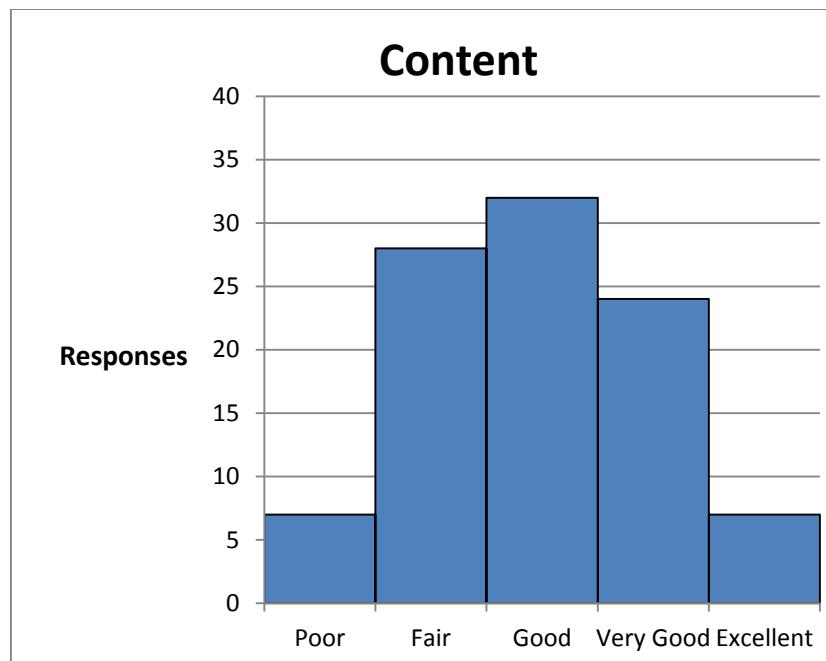
Figure 17 Residents Rating of Content
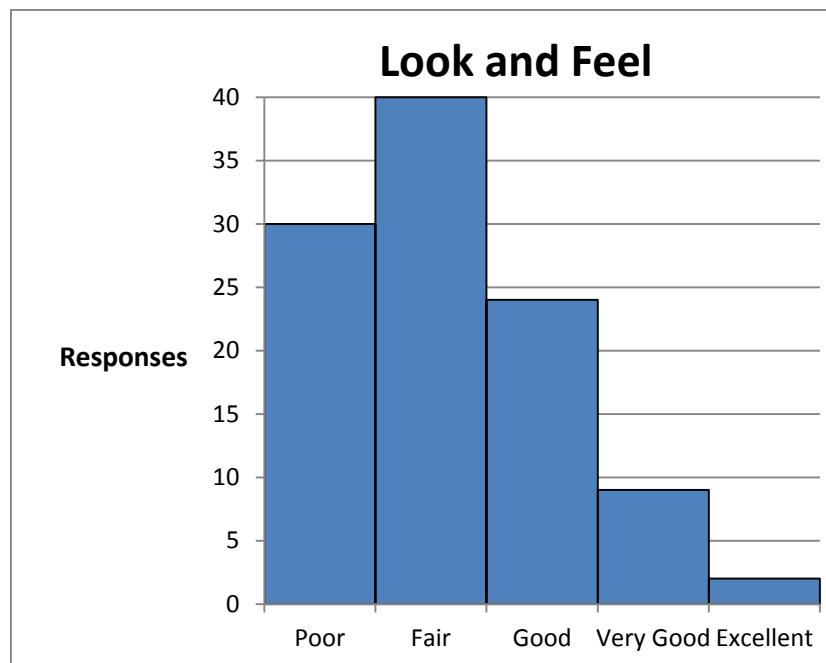
Figure 18 Residents Rating of Look and Feel
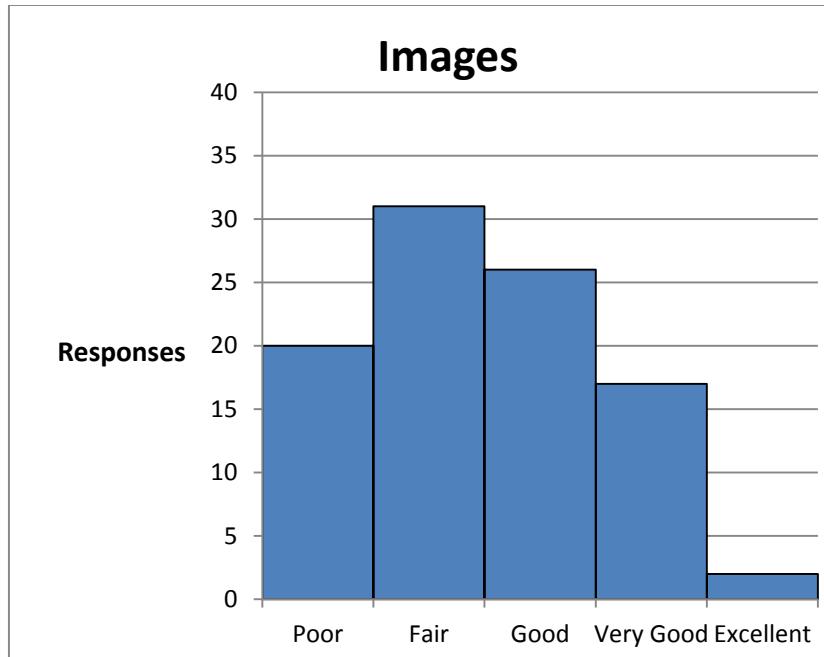
Figure 19 Residents Rating of Images

	Tools/Apps	Content	Look and Feel	Images
Average	2.54	2.96	2.17	2.48

Table 6 Residents Averages for Current Site

Note: Averages do not factor in "no opinion"s.

Residents gave the content an average score of "good", the look and feel of the website an average of "fair", and the Tools/Apps and Images both had averages half way between "fair" and "good". Very few residents rated anything as "excellent".

The survey also asked for people to indicate the area on the website which their eyes first notice when they look at the website. 76 Residents responded to this question. The most commonly noticed areas were the pictures at the top of the website, and the menus on the left of the site. The full heat map of clicks can be found in Appendix E.

Note: The next four questions are multiple response questions. Respondents could select as many items as they want, or no items at all for these questions. Percents are the percentage of total respondents that selected that item, and do not add up to 100% as users could select any number of items.

Residents were asked their opinions on specific features on the website. Features that were liked can be found in Table 7, and features that were disliked can be found in Table 8.

Features LIKED	Responses	%
Agendas and Minutes	60	52%
Town News Notifications	53	46%
Calendar	49	43%
SeeClickFix	28	24%
Online Payments	27	23%
Video On Demand	17	15%
ping4alerts!	14	12%
Other:	14	12%

Table 7 Residents Features Liked

| Feature DISLIKED	Responses	%
Online Payments	11	10%
Agendas and minutes	10	9%
Calendar	9	8%
ping4alerts!	9	8%
Town News Notifications	9	8%
Other:	9	8%
Video On Demand	6	5%
SeeClickFix	5	4%

Table 8 Residents Features Disliked
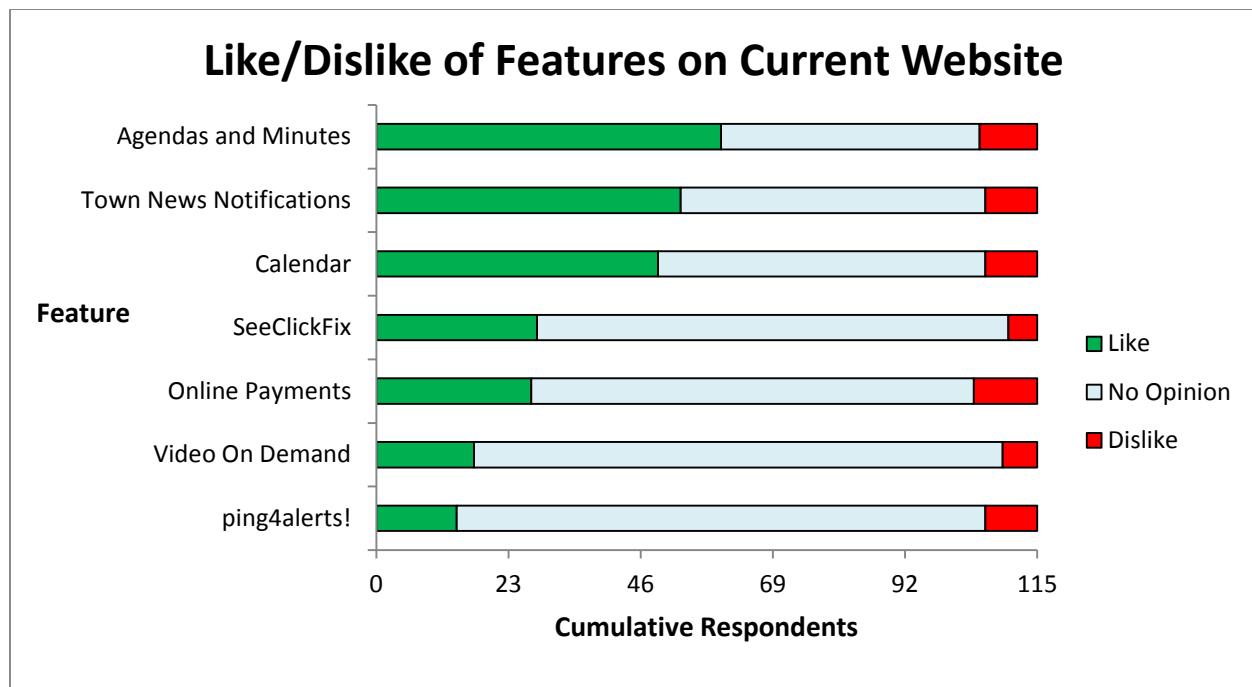
Figure 20 Residents Like/Dislike of Features

The three most liked features are the Agendas and Minutes, Town News Notifications (which was one method of distributing our survey), and the Calendar (see Figure 20). There were no features that were significantly disliked, and only 35 residents disliked any of the features at all, including 2 who selected only "other" and wrote in "*none*", and 3 who selected only "other" and wrote in about the design of the site, not the features ("[Too much information] *on home Page*", "*too crowded*", and "*of interest to all. REALLY? That's it. Should have more links and be modern looking.*").

Items wanted on the Homepage for the new site:

Items for Homepage	Responses	%
Recent News	75	65%
Calendar	66	57%
Agendas and Minutes	38	33%
Picture Slideshow	29	25%
FAQ	28	24%
Other:	11	10%

Table 9 Residents Items Wanted on Homepage

The top two items wanted on the homepage for the new site are Recent News and a Calendar (see Table 9), both of which are on the current site's homepage. Only 25% of residents want a Picture Slideshow on the homepage, but we will put one there anyway; the residents probably just haven't seen a good picture slideshow with overlaid text and links.

Features to be added to the new site:

Features to be added to site	Responses	%
Alert Center (emergency notification)	67	58%
Licenses and Permits	62	54%
Resource Directory	57	50%
Job Postings	52	45%
Online Form Submission	46	40%
Document Center	40	35%
FAQ	28	24%
Opinion Polls	20	17%
Other:	8	7%

Table 10 Residents Features to be Added

Note: some of these features exist on the current site, but aren't very easy to use or find.

The most wanted additional features by residents are the Alert Center, Licenses and Permits, and a Resource Directory (see Table 10). All of the features asked about will likely be included on the new website, but this question can give us an idea of how many people will want to use the features. Not very many residents wanted FAQs or Opinion Polls; it will be up to individual departments whether or not to include a FAQ or an Opinion Poll on their department page.

Open Response Questions:

The survey also included several open response questions:

- If you strongly like/ dislike a feature, please explain why:

- Is there any information that is not on the current town website that you would like to be added?
- What problems do you have with the current town website? (i.e. navigation, lack of information, etc.)
- What about the design would you like to be changed on the new site?
- Additional Comments:

There were many comments complaining about the navigation and layout of the current website. Another common complaint was the information being up to date, specifically meeting minutes and GIS maps. There weren't too many positive comments, except for some about the functionality or content, such as "*Though not flashy, it is functional and for me that is the most important*".

Some comments that we found to be useful were:

"*Nantucket is historical but the website should not be*"

"*Just very disorganized, content frequently out of date, hard to navigate*"

"*I usually pay taxes online and I find it confusing. I also try to do mooring permits, renewals, etc. and it is awful.*"

"*See, Click, Fix looks too much like an ad. I ignored it until I took this survey. Same for Ping 4 alerts.*"

"*I did not know you could do 3/4 of those features. The website hides new features under an old style dull site.*"

"*Hard to find basic info*"

"*It's just so cluttered that it is an unpleasant experience*"

"*It's hard to know what's on it because it is so disorganized*"

"*The gigantic gutters on each side coupled with the large banner images makes the usable space much too small*"

"Organization sucks/ navigation, looks bad graphically"

"The problem with the town website is not the content - there is a lot of valuable content that needs to be preserved. The problem is how everything is presented and arranged. Content is impossible to find"

"The sites REAKS of old code and not having interactive info."

"Make it more mobile friendly."

"Make it look like something other than a link site."

"The home page is too busy."

"The more we can obtain on line, the less phone calls"

4.3.2   Business Community

Our business survey was sent to 14 local businesses. We received 9 individual responses to it; however we did not ask respondents to indicate which business they were a part of. The survey can be found in Appendix H.

Demographics of Respondents are shown in Table 11 and Table 12 and Table 13:

Gender	Responses	%
Male	2	22%
Female	6	67%
No Answer	1	11%

Table 11 Gender of Business Employees

Our respondents from the business community were mostly female.

Age	Responses	%
0-18 years	0	0%
19-40 years	0	0%
41-60 years	6	67%
61+ years	2	22%
No Answer	1	11%

Table 12 Age of Business Employees

The majority of respondents are in the 41-60 age group.

Location	Responses	%
Year Round Nantucket Resident	7	78%
Seasonal Nantucket Resident	0	0%
Visitor/ Tourist	0	0%
Other:	1	11%
No Answer	1	11%

Table 13 Residential Status of Business Employees
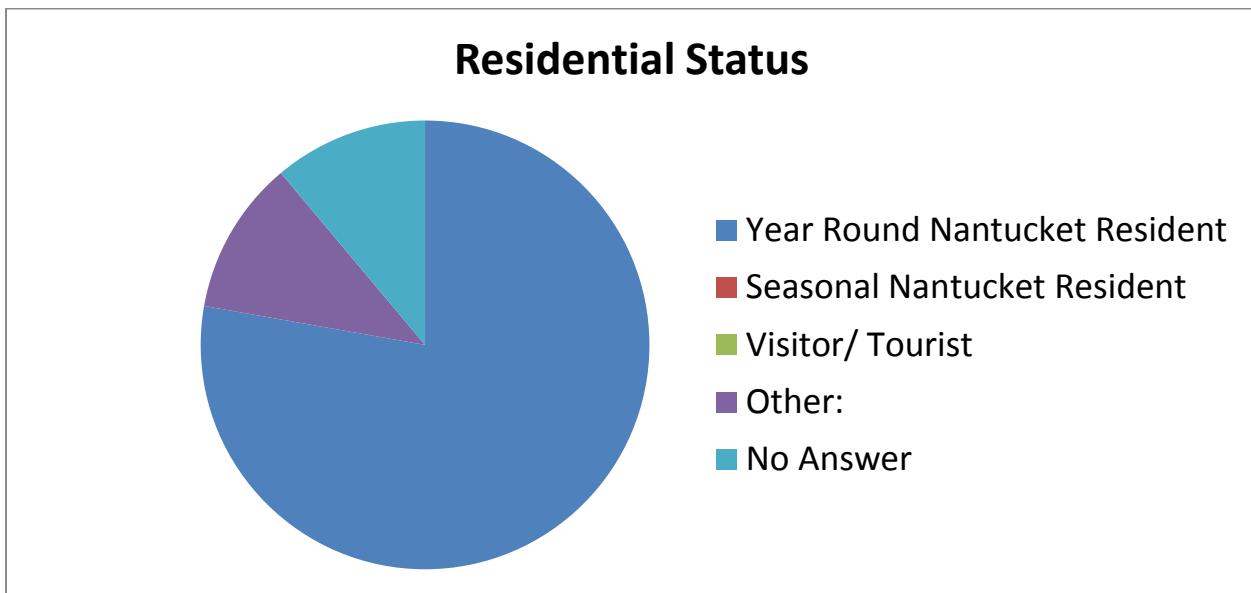
Figure 21 Residential Status of Business Employees

As expected, people who work here also live here all year (see Figure 21). The respondent who answered "other" wrote in "*Business Owner*", so he is most likely a year round resident as well.

Frequency of using the Town Website is shown in Table 14:

Frequency of use	Responses	%
I didn't know there is a Nantucket town website	0	0%
Never	0	0%
Less than Once a Month	2	22%
Once a Month	0	0%
2-3 Times a Month	0	0%
Once a Week	1	11%
2-3 Times a Week	4	44%
Daily	1	11%
No Answer	1	11%

Table 14 Business Employees Frequency of using the Town Website

Most of the business community seems to use the town website frequently. In order to conduct business in a town, it is important to know the various laws it has, and to apply for permits, and also to be aware of what is going on it town.

Opinions on the current Town Website:

Users were asked to rate aspects of the site on a scale from 1 to 5, with 1 being "poor" and 5 being "excellent". The results are shown in Table 15, and averages are shown in Table 16.

Aspect of Website	Poor	Fair	Good	Very Good	Excellent	No Opinion*
Tools/ Apps (i.e. SeeClickFix, online payments, etc.)	1	3	2	0	0	3
Content (meeting agenda, budget information, etc.)	0	1	7	0	0	1
Look and Feel of the Website	2	3	2	0	0	2
Images found on the website	1	2	5	0	0	1

Table 15 Business Employees Rating of Current Site

*Respondents who did not select anything for an item were counted along with those who selected "no opinion" for that item.

	Tools/Apps	Content	Look and Feel	Images
Average	2.166667	2.875	2	2.5

Table 16 Business Employees Averages for the Current Site

Note: Averages do not factor in "no opinion"s.

Business employees gave the content an average score of "good", the look and feel of the website and the Tools/Apps an average of "fair", and the Images was averages half way between "fair" and "good". No respondents rated anything as "very good" or "excellent".

The survey also asked for people to indicate the area on the website which their eyes first notice when they look at the website. Only four respondents answered this question. Two clicked on the picture at the top, and two clicked in the Residents section in the middle column of the website.

Note: The next four questions are multiple response questions. Respondents could select as many items as they want, or no items at all for these questions. Percents are the percentage of total respondents that selected that item, and do not add up to 100% as users could select any number of items.

Business employees were asked their opinions on specific features on the website. Features that were liked can be found in Table 17, and features that were disliked can be found in Table 18.

Features LIKED	Responses	%
Agendas and Minutes	7	78%
Town News Notifications	6	67%
Calendar	5	56%
Other:	2	22%
Video On Demand	1	11%
SeeClickFix	1	11%
ping4alerts!	0	0%
Online Payments	0	0%

Table 17 Business Employees Features Liked

Feature DISLIKED	Responses	%
Other:	4	44%
Agendas and minutes	0	0%
Town News Notifications	0	0%
Calendar	0	0%
Video On Demand	0	0%
SeeClickFix	0	0%
ping4alerts!	0	0%
Online Payments	0	0%

Table 18 Business Employees Features Disliked
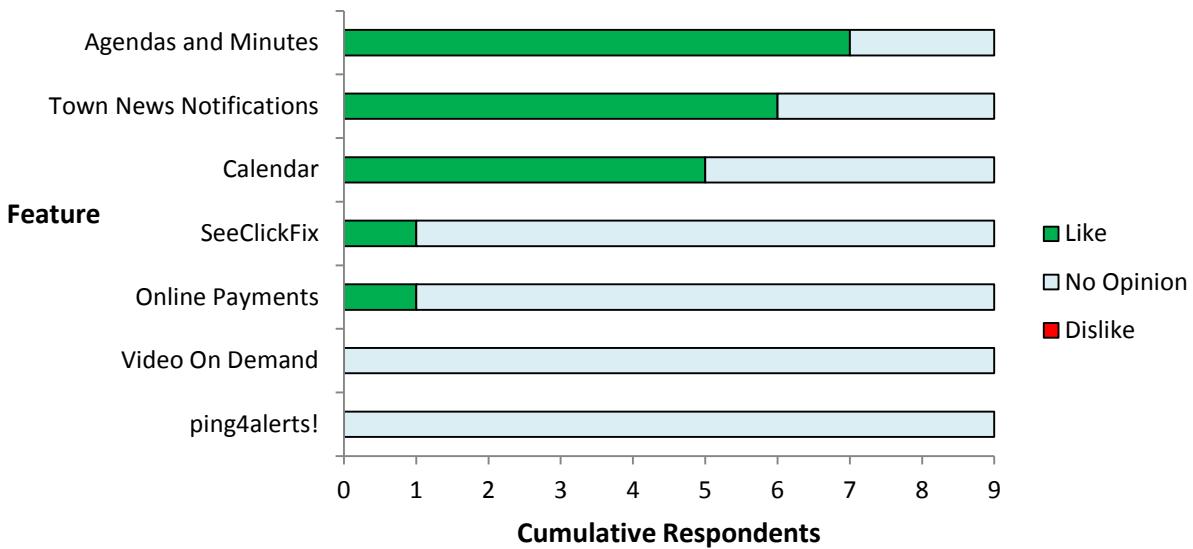
Figure 22 Business Employees Like/Dislike of Features

The three most liked features are the Agendas and Minutes, Town News Notifications, and the Calendar (see Figure 22). These are the same top three that residents liked. No one selected any of the specific features to dislike, but four people did select "other". The write ins for "other" were "*zoning maps*", "*navigation and look*", "*I only use the features that I like*", and one person who selected "other" didn't write in anything.

Items wanted on the Homepage for the new site:

Items for Homepage	Responses	%
Calendar	7	78%
Recent News	5	56%
Picture Slideshow	4	44%
FAQ	3	33%
Agendas and Minutes	3	33%
Other:	0	0%

Table 19 Business Employees Items Wanted on Homepage

The top two items wanted on the homepage for the new site are Recent News and a Calendar (see Table 20), which are the same as the residents' top two.

Features to be added to the new site:

Features to be added to site	Responses	%
Document Center	7	78%
Alert Center (emergency notification)	6	67%
Licenses and Permits	5	56%
Resource Directory	5	56%
Online Form Submission	4	44%
Job Postings	3	33%
Opinion Polls	2	22%
FAQ	2	22%
Other:	1	11%

Table 20 Business Employees Features to be Added

Note: some of these features exist on the current site, but aren't very easy to use or find.

The most wanted additional features by the business community are the Alert Center, Licenses and Permits, and a Document Center (see Table 20) (Alert Center and Licenses and Permits were also in the Residents' top three). All of the features asked about will likely be included on the new website, but this question gave us an idea of how many people will want to use the features.

Open Response Questions:

The survey also included several open response questions:

- If you strongly like/ dislike a feature, please explain why:
- Is there any information that is not on the current town website that you would like to be added?
- What problems do you have with the current town website? (i.e. navigation, lack of information, etc.)

- What about the design would you like to be changed on the new site?

- Additional Comments:

Some comments that we found to be useful were:

"*The site is very busy.*"

"*Very frustrating when trying to find information*"

"*Current content with an easy chain to follow the topic back would be best.*"

"*If you don't know exactly where to find information (zoning, planning, building) the initial location of the right department is tough*"

4.3.3   Town Employees

We received 47 responses to our survey for town employees, out of approximately 150 town employees that should have received the emails we sent out. The survey can be found in Appendix I.

Demographics of Respondents are shown in Table 21 and Table 22:

Gender	Responses	%
Male	16	34%
Female	29	62%
No Answer	2	4%

Table 21 Gender of Town Employees

About 2/3 of the town employees who responded were female, and 1/3 male.

Age	Responses	%
0-18 years	0	0%
19-40 years	11	23%
41-60 years	27	57%
61+ years	7	15%
No Answer	2	4%

Table 22 Age of Town Employees

Most town workers are in the 41 to 60 age group.

Respondents were asked to write in which department they are an employee of (see Table 23).

Department	Responses	%
Administration	3	6%
Building*	1	2%
DPW	2	4%
Finance	10	21%
HDC*	1	2%
Health*	1	2%
Human Resources	1	2%
Human Services	1	2%
IT	5	11%
Natural Resources	1	2%
Our Island Home	7	15%
PLUS	6	13%
Public Safety	1	2%
Registry of Deeds	1	2%
School	1	2%
Town Clerk	2	4%
Visitor Services	1	2%
No Answer	2	4%

Table 23 Department of Town Employees

*Building, Health, and HDC are all divisions of PLUS; these three responses are not included in the PLUS category.

Frequency of Updating the Town Website is shown in Table 24:

Town employees were asked how often they update the information on the town website. Note that this is different from the question to businesses and residents, which asked how often they use the site.

Frequency of updating	Responses	%
Never	16	34%
Less than Once a Month	10	21%
Once a Month	2	4%
2-3 Times a Month	6	13%
Once a Week	3	6%
2-3 Times a Week	3	6%
Daily	1	2%
No Answer	6	13%

Table 24 Town Employee Frequency of Updating the Website

Most people either never or rarely update the site, and only 7 respondents said they update the site at least once a week.

Opinions on the current Town Website:

Users were asked to rate aspects of the site on a scale from 1 to 5, with 1 being "poor" and 5 being "excellent". The results are shown in Table 25, and averages are shown in Table 26. Graphs of the results for each individual aspect can be found in Figure 23, Figure 24, Figure 25, and Figure 26.

Aspect of Website	Poor	Fair	Good	Very Good	Excellent	No Opinion*
Tools/ Apps (i.e. SeeClickFix, online payments, etc.)	2	11	15	4	1	14
Content (meeting agenda, budget information, etc.)	1	10	12	11	5	8
Look and Feel of the Website	6	13	12	7	2	7
Images found on the website	7	6	15	9	3	7

Table 25 Town Employees Rating of Site

*Respondents who did not select anything for an item were counted along with those who selected "no opinion" for that item.
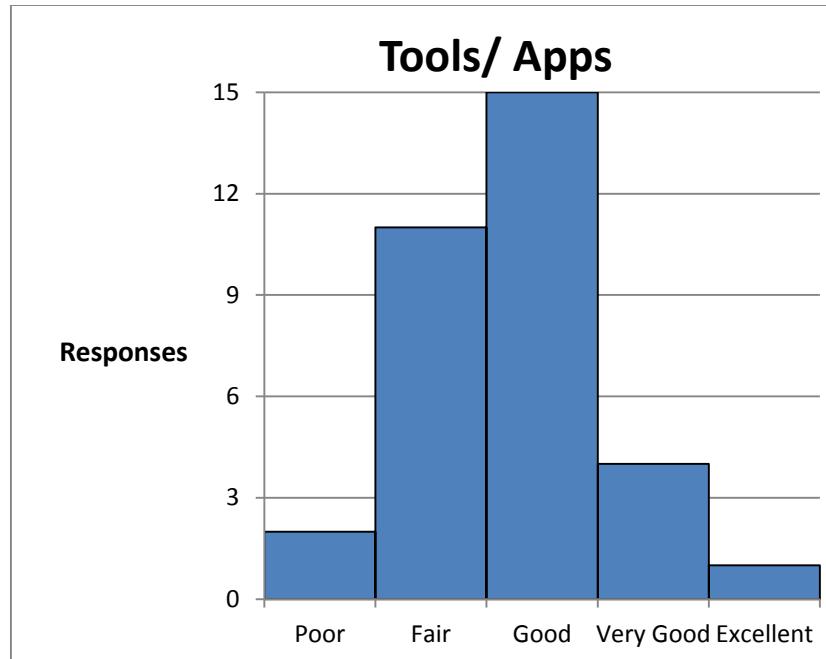
Figure 23 Town Employee Rating of Tools/Apps
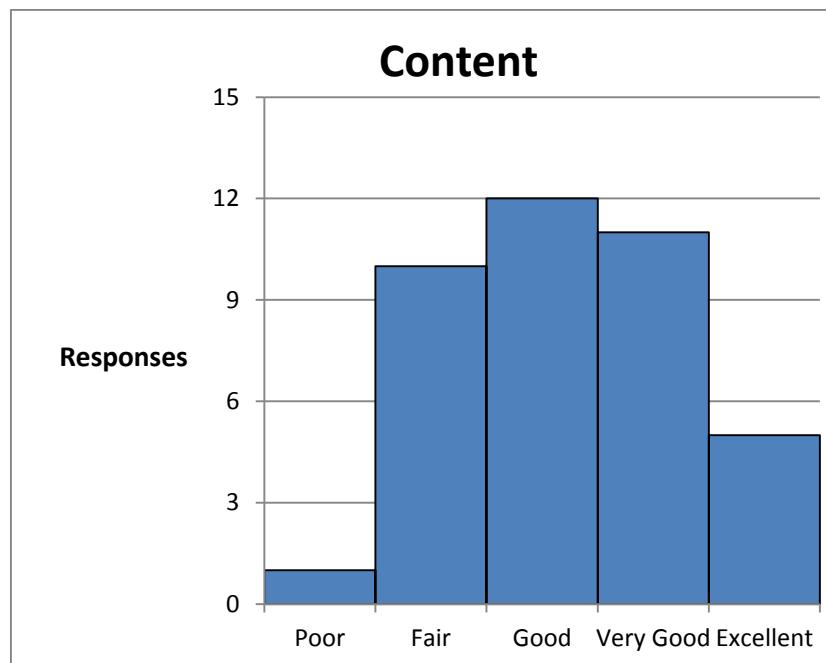
Figure 24 Town Employee Rating of Content
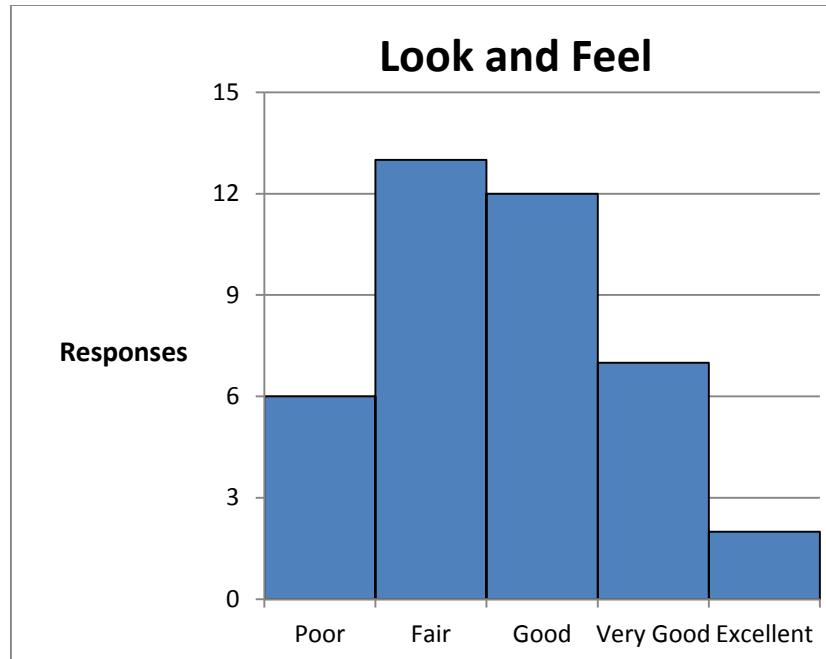
Look and Feel

Figure 25 Town Employee Rating of Look and Feel
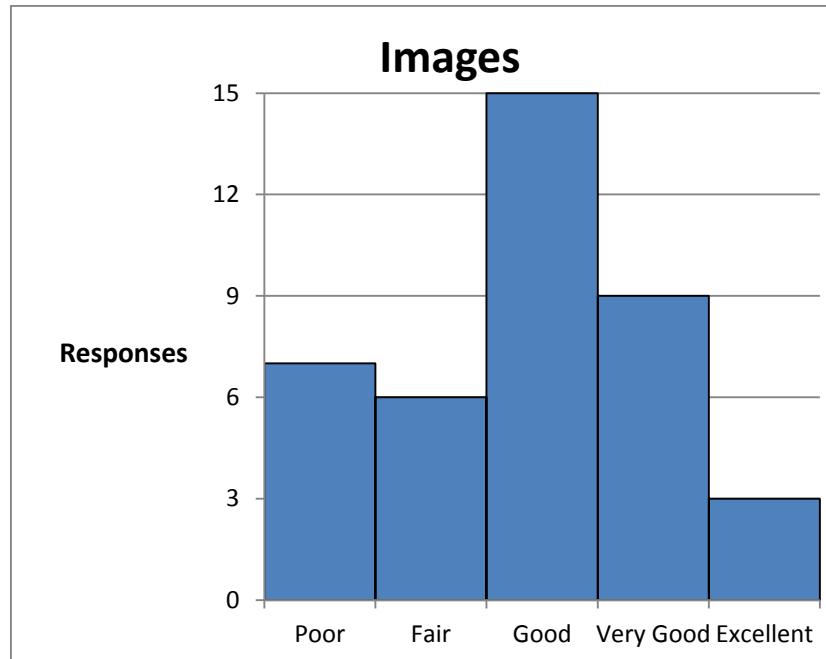
Images

Figure 26 Town Employee Rating of Images

	Tools/Apps	Content	Look and Feel	Images
Average	2.73	3.23	2.65	2.88

Table 26 Town Employee Averages for Current Site

Note: Averages do not factor in "no opinion"s.

Town employees gave the content an average score of a bit above "good", and the other three categories an average score a bit below "good".

The survey also asked for people to indicate the area on the website which their eyes first notice when they look at the website. 27 town employees responded to this question. The most commonly noticed area was the pictures at the top of the website. The full heat map of clicks can be found in Appendix F.

Note: The next five questions are multiple response questions. Respondents could select as many items as they want, or no items at all for these questions. Percents are the percentage of total respondents that selected that item, and do not add up to 100% as users could select any number of items.

Town employees were asked their opinions on specific features on the website. Features that were liked can be found in Table 27, and features that were disliked can be found in Table 28.

Features LIKED	Responses	%
Agendas and Minutes	26	55%
Calendar	20	43%
Town News Notifications	18	38%
Video On Demand	17	36%
Online Payments	12	26%
Emergency Notification	12	26%
Other:	8	17%
Service Request	3	6%

Table 27 Town Employees Features Liked

Feature DISLIKED	Responses	%
Other:	8	17%
Calendar	7	15%
Service Request	6	13%
Online Payments	5	11%
Town News Notifications	4	9%
Emergency Notification	4	9%
Agendas and minutes	3	6%
Video On Demand	2	4%

Table 28 Town Employee Features Disliked
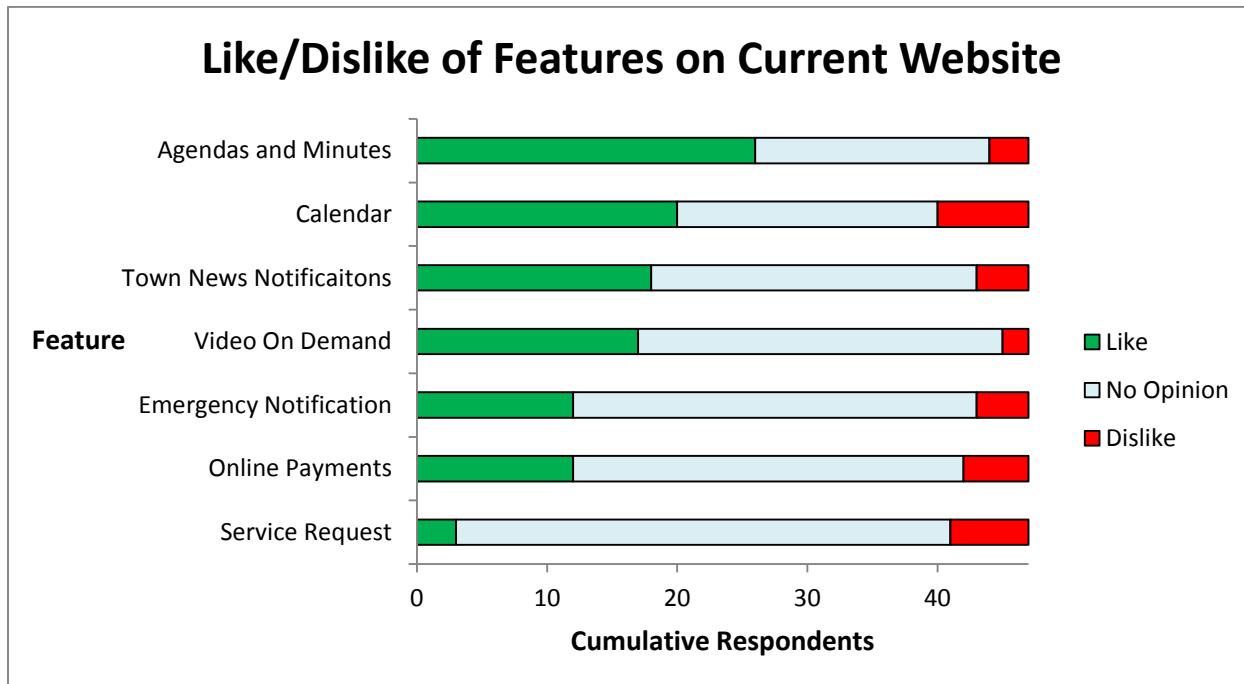
Figure 27 Town Employee Like/Dislike of Features

The three most liked features are the Agendas and Minutes, Town News Notifications, and the Calendar (see Figure 27). There were no features that were significantly disliked, with the calendar being the most dislike feature with 7 dislikes, followed by service request with 6 dislikes.

Items wanted on the Homepage for the new site:

Items for Homepage	Responses	%
Calendar	28	60%
Recent News	24	51%
Picture Slideshow	17	36%
FAQ	15	32%
Agendas and Minutes	14	30%
Other:	7	15%

Table 29 Town Employee Items Wanted on the Homepage

The top two items wanted on the homepage for the new site are Recent News and a Calendar (see Table 29), both of which are on the current site's homepage.

Features to be added to the new site:

Features to be added to site	Response	%
Alert Center (emergency notification)	25	53%
Resource Directory	20	43%
Job Postings	18	38%
Online Form Submission	18	38%
Document Center	16	34%
Social Media	14	30%
Opinion Polls	11	23%
Bid Postings	10	21%
FAQ	9	19%
Personalized Homepage	7	15%
Blog	6	13%
Other:	2	4%

Table 30 Town Employee Features to be Added

Note: some of these features exist on the current site, but aren't very easy to use or find.

The most wanted additional features by town employees are the Alert Center, Job Postings, Online Form Submission, and a Resource Directory (see Table 30). All of the features asked about

will likely be included on the new website, but this question can give us an idea of how many people will want to use the features.

Items wanted on Department Pages are shown in Table 31:

Feature	Response	%
Documents	23	49%
FAQ	21	45%
Events	20	43%
Picture Slideshow	15	32%
Other:	7	15%

Table 31 Town Employee Items Wanted on Department Pages

All of these features will be available to departments, and individual department will be able to decide which features are right for their page.

Open Response Questions:

The survey also included several open response questions:

- What information do you get most frequently contacted for, if at all (i.e. visitors asking where bathrooms are, residents asking where to find a specific form, etc.)?
- If you strongly like/ dislike a feature, please explain why:
- Is there any information that is not on the current town website that you would like to be added?
- What problems do you have with the current town website? (i.e. navigation, lack of information, etc.)
- What about the design would you like to be changed on the new site?
- What would you like to be different about the department pages on the new website?
- Additional Comments:

Most of the information the employees said they get contacted about is on the town website, but perhaps residents can't easily find it, so they just call instead.

Some comments that we found to be useful were:

"*Home page is not well structured. Categories (Residents, Visitors, Business, All) do not make sense to me - would prefer to see divisions by functionality - Finances, Meetings, Events, etc.*"

"*Do not like that it requires software and a login to update content.*"

"*I like all the features, I'm just not sure how 'user friendly' the site is to get people to what they are looking for.*"

"*The Search feature is very poor*"

"*I find the terminology and tools of* [the current vendor] *confusing and unhelpful.*"

"*the health department is NOT listed on the departments front page...you need to drill into Planning and land Use services to find us....who knows this?*"

"*Things are too difficult to find, like the employment application. It is my experience when people are looking for it they end up calling the Town because they simply cannot find it.*"

"*A lot of people have a hard time finding agendas, minutes, information - especially now that all information for building, HDC, etc. is under the PLUS link. It's just not that clear...*"

"*Homepage messy and overwhelming.*"

"*I think each department should have the authority to update their own page*"

"*A mobile site could be useful if done properly*"

4.3.4   Compare and Contrast of Survey Responses

All three groups liked the content on the site the most, and thought the design of the site was the worst of those four aspects (see Figure 28). Town employees rated everything higher on average, probably because they are the ones who upload things to the site and create the documents and images that are on it.

Average Ratings of Site
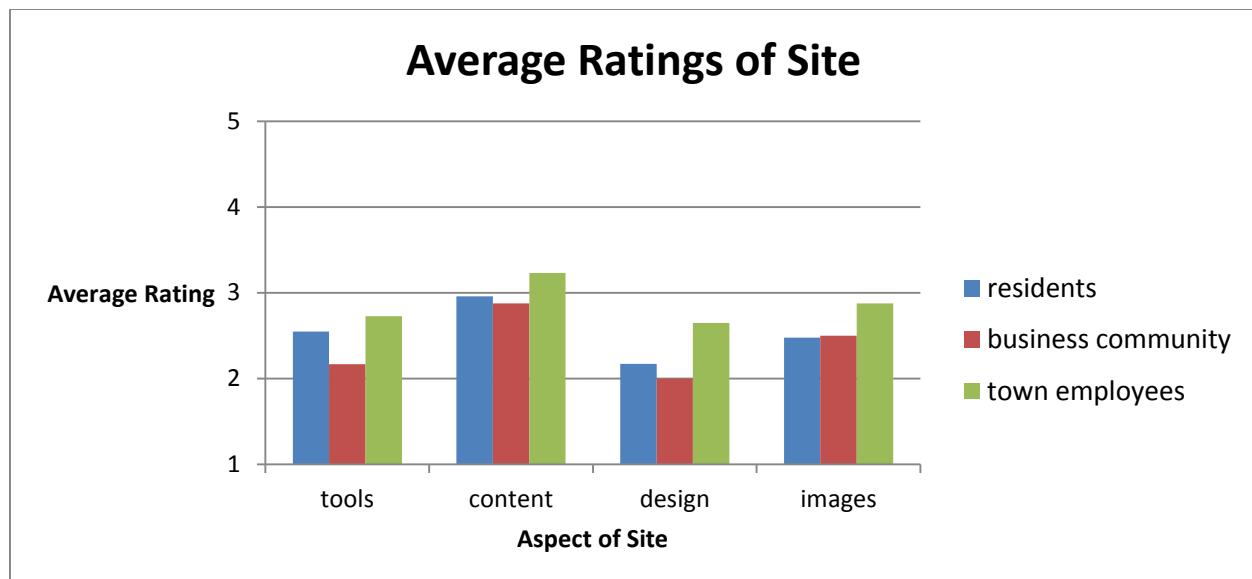
Figure 28 Average Ratings of Site

For specific features on the site, the percent of respondents who like and dislike each feature was about the same for each group, with Agendas and Minutes, Town News Notifications, and Calendar being the top three most liked features for each group. In our survey to businesses, none of the respondents indicated that they disliked any of the listed features.

In Figure 29, there are three bars for each feature. The top bar of each feature, labeled "1", shows how residents felt about that feature, the second bar, labeled "2", shows how business employees felt about that feature, and the third bar, "3" shows how town employees felt about that feature. In each bar, the green portion indicates the proportion of respondents who liked that feature, and the red portion indicates the proportion of respondents who disliked that feature.
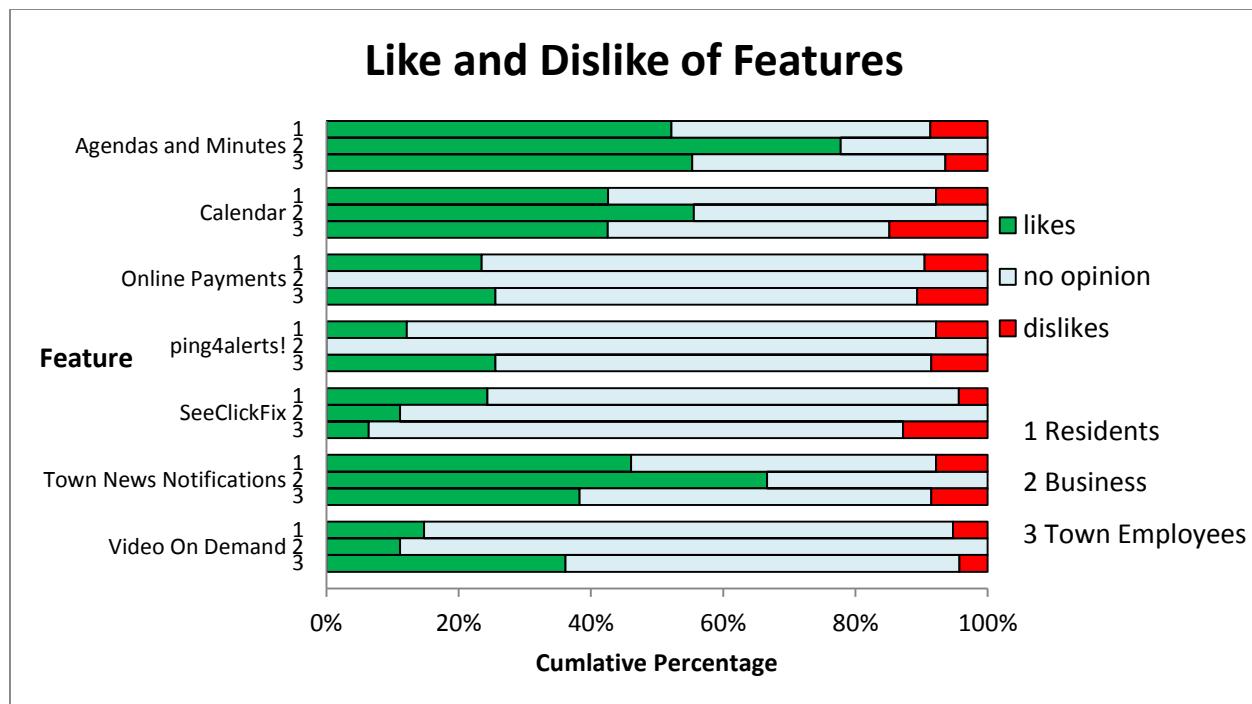
Figure 29 Like/Dislike of Features

All three groups had Calendar and Recent News as the top two things to put on the homepage (see Figure 30). Residents had Recent News above Calendar, while the other two groups thought that Calendar was more important than Recent News.
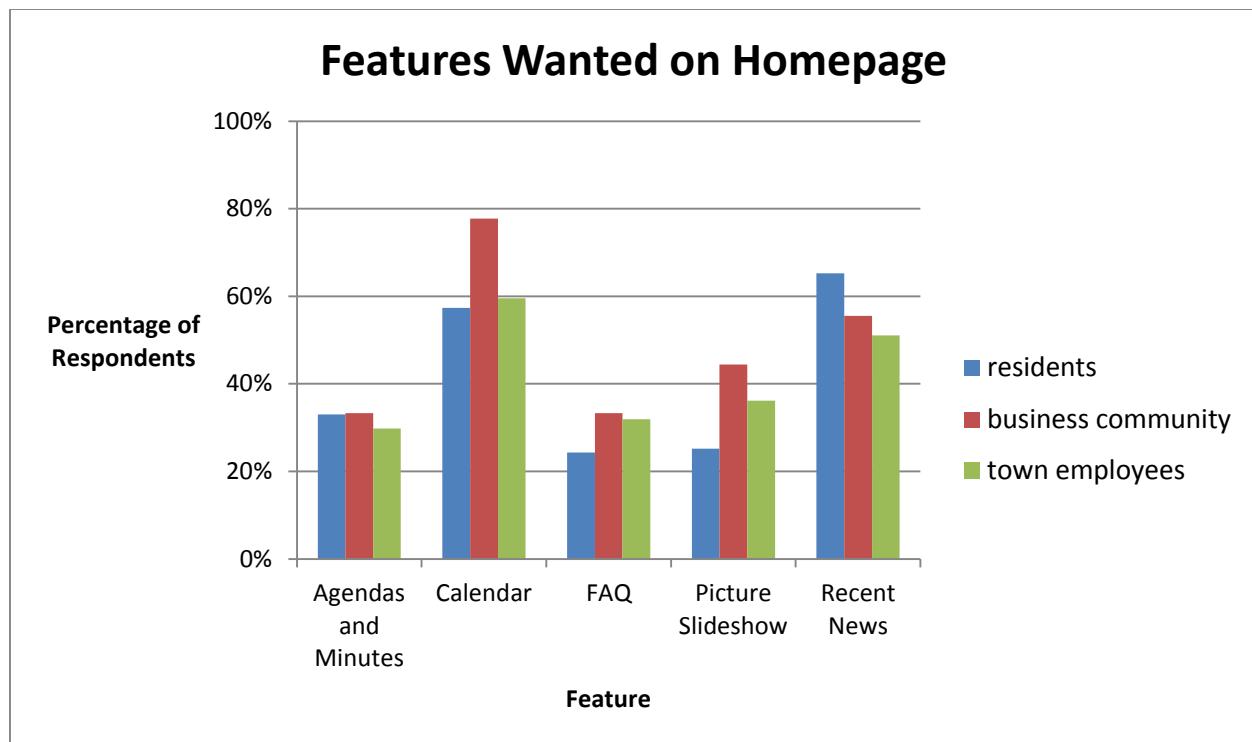
Figure 30 Features Wanted on Homepage

For the question on what features should be added to the site, we gave slightly different options to residents/businesses and town employees. This is because the town employees will be using the back end of the site, while residents and businesses will only be using the front end. For the features that were on all the surveys, the results were very similar (see Figure 31), with FAQ and opinion polls being the lowest with around 20% of respondents wanting that to be added, and Alert Center getting around 60% of respondents wanting it. The main difference was in Document center, where a bit less that 40% of residents and town employees indicated they would want that feature, but almost 80% of business employees wanted that feature. This is probably because a business is more likely to have to dig through old documents to find one that applies to what they are trying to do.
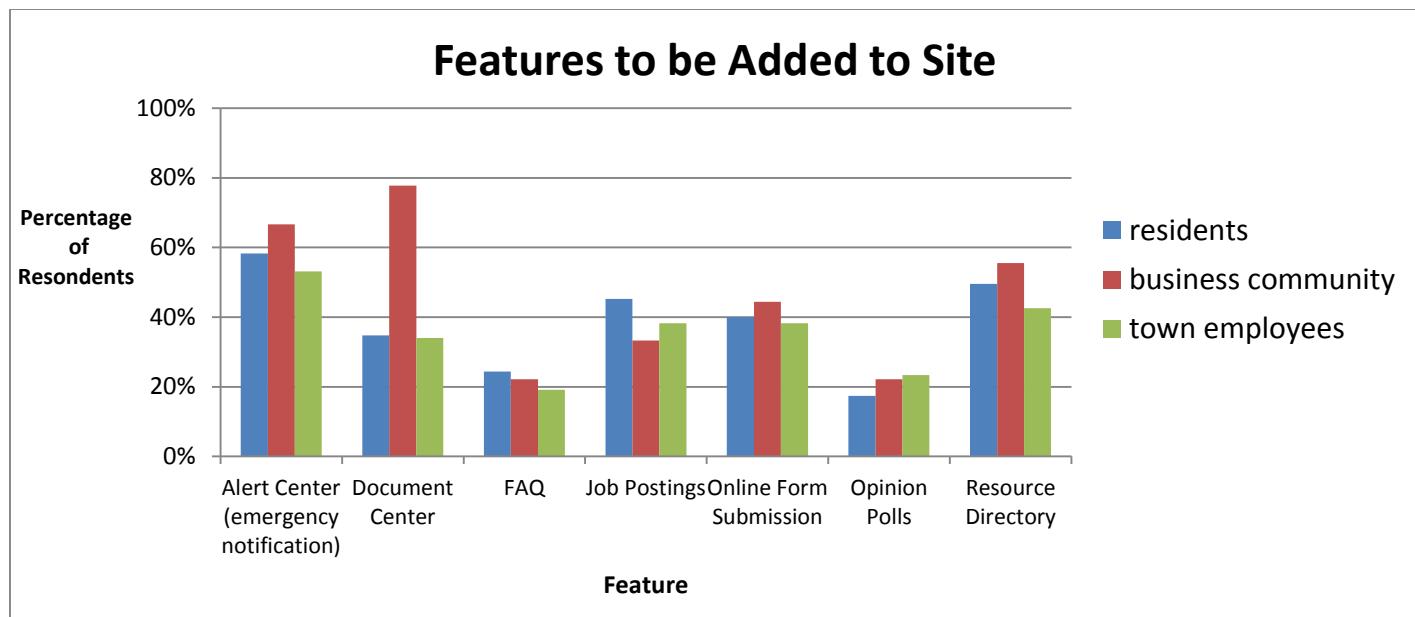
Figure 31 Features to be Added to Site

4.4   Department Meeting Results

4.4.1   Town Administration

On December 4th, we had a meeting with three representatives from town administration, Town Manager Elizabeth Gilbson, Assistant Town Manager Gregg Tivnan and Executive Assistant to the Town Manager Erika Mooney. The purpose of this meeting was to show them how the department page clean-ups had to be done in order to get their backing when asking the other departments to do it. During the meeting, we showed them the department page analysis page that we created, including the list of forms, documents, and broken links that are on the homepage. We also told them that the documents and forms will be moved into the document center, a specific space storing all the documents, and a link to the document center will be on the homepage. Currently, the Procurement Office and Human Resources Office are under Town Administration page, which makes them difficult to find. The Town Administration agrees that the website structure should not be the same as the political hierarchy of the town. As a result, Procurement Office and Human Resources Office will be moved to separate pages on the same level with Town Administration. All three representatives from Town Administration agreed that the current site is too old to be used and it is necessary to get rid of the old site and create a new site. They are also provided backing when we asked every department to clean-up their pages.

4.4.2 Visitor Services

On December 11th, we had a meeting with Visitor Services. We thought it was necessary to explain the clean-up process of the website to them, and how the pages would be formatted on the new site. The representatives we met with were Director Kate Hamilton-Pardee and Administrator David Sharpe. Visitor Services' page contains important information for visitors, including logging services, transportations to the island and transportations on the island, etc. and Visitor Services updated this information frequently. However, the format of the page makes all the information difficult to find. During the meeting, we explained the department pages on the new site will be separated to three columns; links to related pages will be moved to left column, contact information and quick links will be moved to the right, and the text and pictures in the main body will stay in the middle. Also, because all of this information is frequently accessed by visitors, the visitors should be able to access the information through multiple click paths. Thus, information like how to get the Nantucket Island or Getting around Nantucket Island will be hyperlinked to on the homepage, under the "visitor" menu, and under the "how do I" menu tab. Kate also wanted the information about local festival events to be shown in an eye-catching place, which can be achieved by either using the spotlight module or a clickable slideshow on the homepage.

5 CONCLUSIONS AND RECOMMENDATIONS

Our project presented a unique IQP experience. Whereas most projects work towards a list of recommendations, we worked towards a concrete product, the finished town website. Decisions were being made during the projects timeline that were in the plan for the completed website. This led to frequent communication with our sponsor to ensure that all deadlines were met and we were always working in accordance with one another.

The interaction with CivicPlus also made this a unique IQP experience. As the third party vendor orchestrating the production of the new website, we had to ensure that all of their needs were being met exactly. Working with CivicPlus limited our recommendations to be within the scope of CivicPlus' design formats in order for the recommendations to be taken into consideration at all. While on the island, survey data was used in talks with CivicPlus and the meetings were used to inform the departments what we needed from them and how everyone had to proceed to finish the website. Therefore, some of the recommendations included in this report were already agreed upon with our sponsor and were in the final plans for the new Nantucket Town Website.

5.1 Conclusion

5.1.1 Uniqueness of Nantucket

Nantucket is an island that has a small town atmosphere in the winter and is a vacation hotspot in the summer. This drastic and sudden seasonal switch created a unique challenge when designing the new town website. Although the primary focus of this website is not to address visitors' needs, visitors had to be taken into consideration. A visitors section was included in the new website design that was geared towards directing people to the correct information they needed quickly even if the information would be found on an external website. Overall, the website had to represent and feel like it belonged to a small, tight knit community while still not ignoring the thousands of tourists that look to visit the island.

5.2 Recommendations

5.2.1 Homepage Recommendations

In discussions with CivicPlus throughout the project, CivicPlus representatives frequently said Nantucket has the best landscape and landmark pictures that they had ever received for a website they were designing. This presented the opportunity to create a visually appealing homepage which addressed a major problem with the old website. As shown in Results section 4.1.1, the bounce rate for the 2013 Nantucket Town website was extremely high partly because of its dated design.

A website utilizing newer designs and better visuals (such as those discussed in section 2.5.2) will have a lower bounce rate, and making the website visually appealing was one of the first goals from the onset of this project. Therefore, in agreement with our sponsor, it was decided a large background image that represented Nantucket's beauty through a landscape, landmark, or ocean picture would be the best imagery for the website, and the picture should be changed seasonally.

We have also decided that the homepage of the new website should contain the following features based on the data recorded from the surveys in section 4.3:

- Calendar – a comprehensive calendar that includes all individual department/ boards calendars on the website contained in one

- Smart Picture Slideshow – a slideshow containing five to seven pictures that contain a short write up on a highlighted event or project on the island. These pictures would hyperlink to another page that would go into further detail.

- Recent News/ Spotlight – two tabs on the homepage that expand into Recent News and Spotlight respectively. Recent News will be much like what is on the 2013 Nantucket Town Website where important news and notifications will be added. Spotlight will show big events and other happenings on the island.

- Calls to Action – four to six attention grabbing graphics that will link to important areas of the website. We recommend the Calls to Action to be Notify Me, Agendas & Minutes, Report a Concern, Online Payments, and Bid Postings.

5.2.2 Department Pages

CivicPlus ensures that all department pages are the same format when the old content of a website is migrated over to the new website. This ensures that the site is fluid and easy to understand if someone is searching between different department pages. The center part of the page, what we refer to as the "main text", has explanations of the departments and important information for all of CivicPlus' recent websites. However, the client can decide on how the department pages' left and right banners will be arranged. Table 32 shows our recommended formatting for the department pages' left and right banners.

Left Banner	Right Banner
Related Pages (links to internal URLs)	Department Contact Information
Calls to Action (same ones included on homepage)	Quick Links (links to external sites)
	FAQs

Table 32 Department Pages Banner Layout

5.2.3 Specific Modules

CivicPlus offers a very wide variety of modules and each one is just as useful as the last. We highlighted five of these modules in section 4.2 but reviewed others as well that were not included in this report. Along with the five highlighted modules (Bid Postings, Document Center, Quick Links, Calendar, and Agendas and Minutes) we recommend the following modules to be used in the new website:

- Report a Concern – An area for citizens to report a problem in the community. This allows users to report concrete problems (i.e. a streetlight is out) or post a concern about services/ information the town provides (i.e. taxi rates are not updated on the website)

- Related Pages – The platform that department staff can use to set up links on their pages to other internal URLs of the website

- Job Postings – An area for the town to post municipal staff openings. Contains an update notification center where users can sign up to be notified whenever a job is posted or taken off of the website.

- Licenses and Permits – License and permit applications that can be completed in their entirety online. Also offers the options for users to pay license and permit application fees when they complete the application.

- Notify Me – An easy way of setting up text and/or e-mail notifications to people who sign up for the service. These notifications can include when a calendar is updated, when the town wishes to send out important information, etc.

- Facilities and Reservations – Provides users with the ability to reserve specific facilities throughout the town. This could be used for park space, meeting rooms, and other town owned properties.

- Blog – Allows government transparency and citizen interaction by creating a part of the site where a town employee can write a blog where there is a comment section for the public. This could be used to incorporate the Town Manager's Website into the new website by giving her the forum to post information to the public.

- Staff Directory – Provides detailed contact information for the staff of an entire department. This module is most often used with the contact information provided on a department's page.

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APPENDIX A

Below is the Matlab code used for creating the site map of the Nantucket town website.

```matlab
%open the file and read it
file = fopen('exported_page_list.csv');
stuff = textscan(file,'%s');
num = length(stuff{1});

%take off the numbers on the end and make lowercase
for i = 1:1:num
    stuff{1}{i} = lower(strtok(stuff{1}{i},','));
end

%not sure how the " got put in, but remove them
for i = 1:1:num
    if stuff{1}{i}(1) == '"'
        stuff{1}{i} = stuff{1}{i}(2:end);
    end
end

%remove '/' at the end of page names for consistence
for i = 1:1:num
    if stuff{1}{i}(end) == '/'
        stuff{1}{i} = stuff{1}{i}(1:end-1);
    end
end

%remove any pages that end have a . towards the end
for i = 1:1:num
    temp = strfind(stuff{1}{i},'.');
    if isempty(temp) == 0 && temp(end) > length(stuff{1}{i})-5
        stuff{1}{i} = '/';
    end
end

%make index be first in the list
for i = 1:1:num
    if length(stuff{1}{i}) > 6 && strcmp(stuff{1}{i}(end-5:end),'/index')
        stuff{1}{i}(end-5:end) = ' index';
    end
end

%remove duplicates
pages = unique(stuff{1});
num = length(pages);

%put back in the / for index
for i = 1:1:num
    if length(pages{i}) > 6 && strcmp(pages{i}(end-5:end),' index')
        pages{i}(end-5:end) = '/index';
    end
end
```

```matlab
%open the output file
out = fopen('output.txt','w');

%write the sitemap to the output file
for i = 1:1:num
    temp = length(strfind(pages{i},'/'));
    if length(pages{i}) > 6 && strcmp(pages{i}(end-5:end),'/index')
        temp = temp-1;
    end
    temp = temp-1;
    for j = 1:temp
        fprintf(out,'\t');
    end
    fprintf(out,'%s\r\n',pages{i});
end

%close files when done
fclose(file);
fclose(out);

disp(num);
```

APPENDIX B

Below is the navigation based site map:

1) Home Page
   a) Residents
      i) Emergency Management
         (1) Storm resources
            (a) Things to Avoid During a Hurricane
            (b) Recommended Supplies
            (c) Lodging Availability Guide
         (2) Hurricane Evaluation Areas
         (3) Visitor Services
            (a) ACK
            (b) Nantucket Facts
            (c) FAQs
            (d) 2013 Major Events
         (4) Flood Insurance Rate Map Updates
      ii) Master Plan
         (1) "Candle Street"
         (2) Area Plans
         (3) Community and Economics
         (4) Transportation
         (5) Cape Wind
         (6) Open Space Plan
         (7) Additional Links
            (a) Public Review Documents
               (i) Draft Statewide Transportation Improvement Program
               (ii) Brant Point Area Plan Final Draft for Review
               (iii) Planning Office
               (iv) Planning Board
               (v) Nantucket Planning and Economic Development Commission
               (vi) Transportation Planning
      iii) GIS Special Maps
         (1) Zoning Maps
         (2) Historic District Maps
         (3) Water Resource Maps
         (4) Miscellaneous Maps
      iv) Council On Aging
         (1) Frequently Asked Questions
         (2) Congregate Lunch Menus
         (3) Calendar Of Activities
         (4) Saltmarsh Gazette Newsletter
         (5) Fitness Classes

h) Meeting Calendar
   i) Meeting Schedule
   ii) Recreation and Activities Calendar
   iii) Council on Aging Calendar
i) Agendas and Minutes
   i) Minutes
   ii) Agendas
j) Budget Information
   i) Contact
   ii) Budget Highlights
   iii) FY 2015 Budget Information by Category
   iv) FY 2014 Budget Information by Category
   v) Historical information
k) Schools
l) Online Payments
   i) Tax Payments
   ii) Permits
   iii) Other
m) Video on Demand
n) Contact Us
o) Subscribe to News

APPENDIX C

Below is the beginning portion of the URL based site map generated from the MATLAB code (to go to the page precede what is in the site map with www.nantucket-ma.gov):

```
/pages/index
        /pages/calendar
        /pages/nantucketma_admin/index
                /pages/nantucketma_admin/contracts
                /pages/nantucketma_admin/currentnewsletter
                        /pages/nantucketma_admin/currentnewsletter/currentnewsletter_files
                /pages/nantucketma_admin/epermit
                /pages/nantucketma_admin/faq
                /pages/nantucketma_admin/fees
                /pages/nantucketma_admin/fees2009
                /pages/nantucketma_admin/forms
                        /pages/nantucketma_admin/forms/alter
                        /pages/nantucketma_admin/forms/auto
                        /pages/nantucketma_admin/forms/corpname
                        /pages/nantucketma_admin/forms/liquor
                        /pages/nantucketma_admin/forms/mngr
                        /pages/nantucketma_admin/forms/newent
                /pages/nantucketma_admin/list
                /pages/nantucketma_admin/newsletterlinks
                        /pages/nantucketma_admin/newsletterlinks/2013apr
                        /pages/nantucketma_admin/newsletterlinks/2013feb
                        /pages/nantucketma_admin/newsletterlinks/2013jan
                        /pages/nantucketma_admin/newsletterlinks/2013julaug
                        /pages/nantucketma_admin/newsletterlinks/2013jun
                        /pages/nantucketma_admin/newsletterlinks/2013may
                        /pages/nantucketma_admin/newsletterlinks/julaug
                /pages/nantucketma_admin/oihwgreports
                /pages/nantucketma_admin/oihworkgroup
                /pages/nantucketma_admin/permits
                /pages/nantucketma_admin/personnelcomp
                /pages/nantucketma_admin/policiesregs
                /pages/nantucketma_admin/respon
                /pages/nantucketma_admin/rptfiles
                /pages/nantucketma_admin/spaceneeds
                /pages/nantucketma_admin/taccorr
                /pages/nantucketma_admin/townpolicies
                /pages/nantucketma_admin/townreports
        /pages/nantucketma_agcommagenda
        /pages/nantucketma_agcommmin
        /pages/nantucketma_ahbcagenda
                /pages/nantucketma_ahbcagenda/adhocfy2009
```

/pages/nantucketma_ahbcagenda/adhocfy2010
/pages/nantucketma_ahbcagenda/adhocfy2011
/pages/nantucketma_ahbcagenda/adhocfy2012
/pages/nantucketma_ahbcagenda/adhocfy2013
/pages/nantucketma_ahbcmin
/pages/nantucketma_ahbcmin/adhocfy2009
/pages/nantucketma_ahbcmin/adhocfy2010
/pages/nantucketma_ahbcmin/adhocfy2011
/pages/nantucketma_ahbcmin/adhocfy2012
/pages/nantucketma_ahbcmin/adhocfy2013
/pages/nantucketma_ahfiscalcomagenda
/pages/nantucketma_ahfiscalcomagenda/ahfcagenda20090617
/pages/nantucketma_ahfiscalcomagenda/ahfcagenda20090701
/pages/nantucketma_ahfiscalcommin
/pages/nantucketma_ahtfagenda
/pages/nantucketma_ahtfagenda/2009%20ahtf%20agendas
/pages/nantucketma_ahtfagenda/2010%20ahtf%20agendas
/pages/nantucketma_ahtfagenda/2011%20ahtf%20agendas
/pages/nantucketma_ahtfagenda/2012%20ahtf%20agendas
/pages/nantucketma_ahtfagenda/2013%20ahtf%20agendas
/pages/nantucketma_ahtfagenda/i01b4d296
/pages/nantucketma_ahtfmin
/pages/nantucketma_ahtfmin/2009%20ahtf%20minutes
/pages/nantucketma_ahtfmin/2010%20ahtf%20minutes
/pages/nantucketma_ahtfmin/2011%20ahtf%20minutes
/pages/nantucketma_ahtfmin/2012%20ahtf%20minutes
/pages/nantucketma_art68workagenda
/pages/nantucketma_art68workmin
/pages/nantucketma_assessor
/pages/nantucketma_assessor/index
/pages/nantucketma_assessor/assesorrules
/pages/nantucketma_assessor/desktop
/pages/nantucketma_assessor/manual%20photos
/pages/nantucketma_assessor/taxbillsintrain
/pages/nantucketma_auditagenda
/pages/nantucketma_auditagenda/2010fyauditcommagendas
/pages/nantucketma_auditagenda/2011fyauditcommagendas
/pages/nantucketma_auditagenda/2012fyauditcommagendas
/pages/nantucketma_auditagenda/2013fyauditcommagendas
/pages/nantucketma_auditagenda/fy2010auditcommagendas
/pages/nantucketma_auditagenda/fy2011auditcommagendas
/pages/nantucketma_auditagenda/fy2012auditcommagendas
/pages/nantucketma_auditmin
/pages/nantucketma_auditmin/2009auditcommin
/pages/nantucketma_auditmin/2010auditcommin

APPENDIX D

Below is the flier which was used to promote our survey:

WHAT TIME DOES THE DUMP OPEN????

Help us help you find this information easier on the future Nantucket Town Website

We are a group of Worcester Polytechnic Institute students working in collaboration with the Nantucket Information Technology Department in order to design a new town website.

Scan this QR code and take our quick and easy survey. It should only take about 5 minutes!!!

Don't have a QR scanner? Try...

iPhone Users: Quick Scan- QR Code Reader

Android Users: Scan – QR Code Barcode Reader

The survey can also be found in the Town New & Notices section in the top right hand corner of the current town website's homepage (www.nantucket-ma.gov)

APPENDIX E

Below is the heat map from the resident survey as discussed in section 4.3.1:
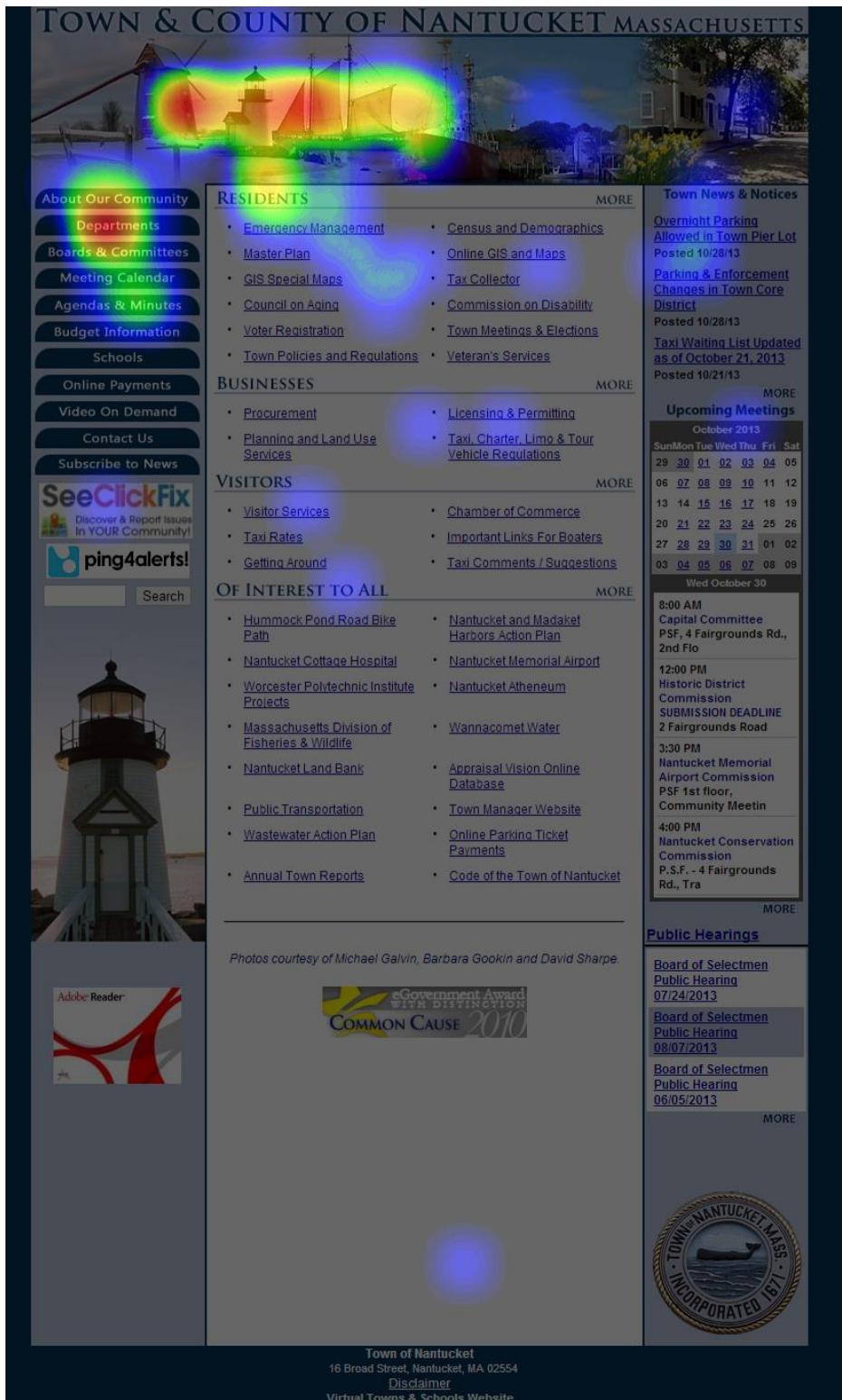
APPENDIX F

Below is the heatmap from town employee survey discussed in section <u>4.3.3</u>:
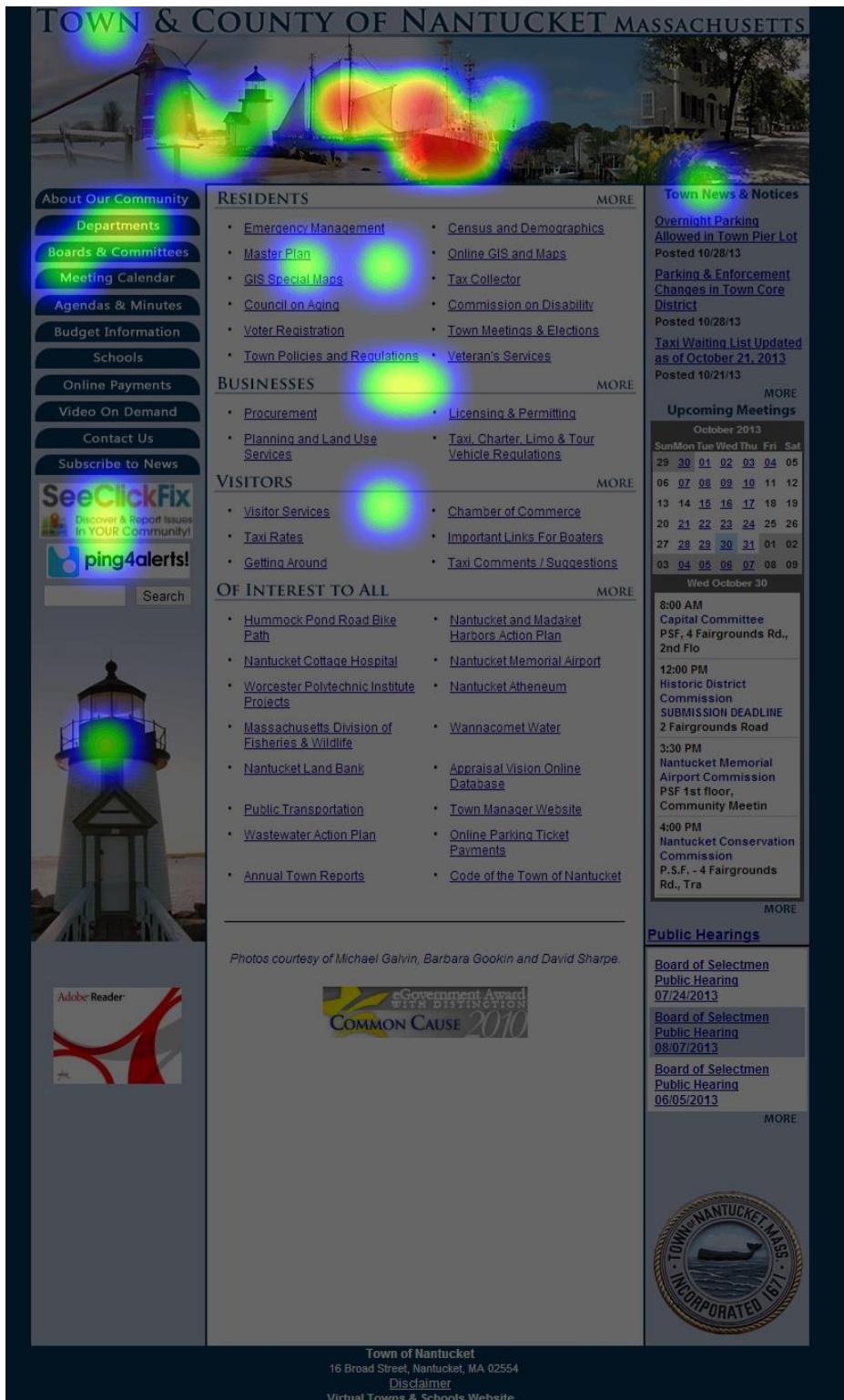
APPENDIX G

The Clean Up guide from CivicPlus can be found on the next page

Content Evaluation Questions

How to Evaluate Information on Your Current Website

When evaluating the content on your current website, CivicPlus suggests looking at the following questions to evaluate the need and usefulness of the information for your users.

1. **Is the information presented up-to-date?**
    a. If not, can it be updated to be relevant now?
    b. If information cannot be updated and is out of date, we recommend deleting or archiving the information.
2. **Is the information presented something citizens are likely to look for on your site specifically, or would they be more likely to use a general search engine (e.g., Google) for that information?**
    a. For example, information on how to assemble a survival kit is something that citizens are likely to search for elsewhere and not expect to be provided by their city. We recommend that information like this be left off of the site.
3. **Does this information come from an authoritative source other than your city or county** (e.g., the Centers for Disease Control and Prevention, etc.)? If you are not the authority on a topic, we recommend that you provide links to the authoritative source instead of repeating the information on your own pages.
4. **Is there sufficient contact information provided?** If not, please add this information.
5. **Is the page too long?** If so, consider breaking it up so that the content is easier for your users to digest. Ideally you should only have one or two related topics per page.
    a. Note: CivicPlus suggests that you aim to keep the content on your pages to 2,000 characters or less. This makes the information easier to digest and minimizes the potential of content lower on the page being overlooked by your users.
6. **Does the formatting make sense (should it be in a bulleted list, in a table, or have a topic heading added)?** If not, rework the information in a way that is easy for your citizens to scan/interpret. Pull the most important content to the top of the page, and evaluate the possibility of moving less important details to a lower page on the site or deleting them all together.
7. **Are items housed where they need to live?** If not, move them to the appropriate department/section of the website. If you feel that citizens are also looking for this information elsewhere, make note so that a link can be provided in that area to direct citizens to the appropriate area.
8. **Is your content intended for the public, or is the information geared toward internal employees?** If your information is aimed at internal employees, then move the information off of your public-facing website and into your employee intranet.
9. **Does the information actually need to be housed on a page or will it be better served as a document?** Good examples of information like this may include safety tips, checklists, guides, legal notices, policies, procedures, disclaimers, etc. Other information that falls into this category should be guided by the following questions:
    a. Will the user want a physical copy of the information to refer back to away from a computer?
    b. Will this information need to be updated annually? Examples may include utility rates, employee benefit information, fliers on yearly events like Fall Cleanup, etc.
    c. Is the information incredibly lengthy or extremely detailed? Users may also want a physical copy in this case as well.
10. **Photos – Are they applicable to the page? Are they too small to be useful?**
    a. Note: CivicPlus does not recommend the use of either stock photos or clip art. Images should only be on a page if they enhance the content. Remember that one applicable picture per page is often plenty unless the pictures are truly explaining/enhancing the content. Multiple pictures (such as pictures of events, classes, camps, etc.) should be neatly organized and housed in the Photo Gallery module.

APPENDIX H

The Survey that was sent to residents and businesses is on the next three pages:

We are a group of students from Worcester Polytechnic Institute conducting research in collaboration with the Nantucket Town Information Technology Department regarding the creation of a new town website. This is an anonymous survey and no personal identifying information will be collected.

All questions are optional.

Any questions/concerns can be sent to jbridges@nantucket-ma.gov

Gender:

◯ Male

◯ Female

Age:

◯ 0-18 years

◯ 19-40 years

◯ 41-60 years

◯ 61+ years

Which describes you best:

◯ Year Round Nantucket Resident   ◯ Seasonal Nantucket Resident   ◯ Visitor/Tourist   ◯ Other: [   ]

About how often do you use the Nantucket Town Website (http://www.nantucket-ma.gov)?

◯ I didn't know there is a Nantucket town website

◯ Never

◯ Less than Once a Month

◯ Once a Month

◯ 2-3 Times a Month

◯ Once a Week

◯ 2-3 Times a Week

◯ Daily

Rate the below aspects of the current town website:

	Poor	Fair	Good	Very Good	Excellent	No Opinion
Tools/Apps (i.e SeeClickFix, online payments, etc.)	◯	◯	◯	◯	◯	◯
Content (meeting agenda, budget information, etc.)	◯	◯	◯	◯	◯	◯
Look and Feel of the Website	◯	◯	◯	◯	◯	◯
Images found on the website	◯	◯	◯	◯	◯	◯

Draw an X on the area your eyes first notice when you look at the current town website's homepage:

TOWN & COUNTY OF NANTUCKET MASSACHUSETTS

SeeClickFix
Discover & Report Issues In YOUR Community!

ping4alerts!

[Search]

RESIDENTS   MORE

- Emergency Management
- Master Plan
- GIS Special Maps
- Council on Aging
- Voter Registration
- Town Policies and Regulations

- Census and Demographics
- Online GIS and Maps
- Tax Collector
- Commission on Disability
- Town Meetings & Elections
- Veteran's Services

BUSINESSES   MORE

- Procurement
- Planning and Land Use Services

- Licensing & Permitting
- Taxi, Charter, Limo & Tour Vehicle Regulations

VISITORS   MORE

- Visitor Services
- Taxi Rates
- Getting Around

- Chamber of Commerce
- Important Links For Boaters
- Taxi Comments / Suggestions

OF INTEREST TO ALL   MORE

- Hummock Pond Road Bike Path
- Nantucket Cottage Hospital
- Worcester Polytechnic Institute Projects
- Massachusetts Division of Fisheries & Wildlife
- Nantucket Land Bank
- Public Transportation
- Wastewater Action Plan
- Annual Town Reports

- Nantucket and Madaket Harbors Action Plan
- Nantucket Memorial Airport
- Nantucket Atheneum
- Wannacomet Water
- Appraisal Vision Online Database
- Town Manager Website
- Online Parking Ticket Payments
- Code of the Town of Nantucket

Photos courtesy of Michael Galvin, Barbara Gookin and David Sharpe.

eGovernment Award WITH DISTINCTION
COMMON CAUSE 2010

Adobe Reader

Town News & Notices

Overnight Parking Allowed in Town Pier Lot
Posted 10/28/13

Parking & Enforcement Changes in Town Core District
Posted 10/28/13

Taxi Waiting List Updated as of October 21, 2013
Posted 10/21/13

MORE

Upcoming Meetings

October 2013

Sun	Mon	Tue	Wed	Thu	Fri	Sat
29	30	01	02	03	04	05
06	07	08	09	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	01	02
03	04	05	06	07	08	09

Wed October 30

8:00 AM
Capital Committee
PSF, 4 Fairgrounds Rd., 2nd Flo

12:00 PM
Historic District Commission
SUBMISSION DEADLINE
2 Fairgrounds Road

3:30 PM
Nantucket Memorial Airport Commission
PSF 1st floor, Community Meetin

4:00 PM
**Nantucket Conservation Commission**
P.S.F. - 4 Fairgrounds Rd., Tra

MORE

Public Hearings

Board of Selectmen Public Hearing 07/24/2013

Board of Selectmen Public Hearing 08/07/2013

Board of Selectmen Public Hearing 06/05/2013

What features on the current site do you like? (select all that apply)

☐ Online Payments   ☐ Calendar

☐ SeeClickFix   ☐ Agendas and Minutes

☐ ping4alerts!   ☐ Town News Notifications

☐ Video On Demand   ☐ Other: _____

What features on the current site do you dislike? (select all that apply)

☐ Online Payments   ☐ Calendar

☐ SeeClickFix   ☐ Agendas and minutes

☐ ping4alerts!   ☐ Town News Notifications

☐ Video On Demand   ☐ Other: _____

If you strongly like/ dislike a feature, please explain why:

Is there any information that is not on the current town website that you would like to be added?

What problems do you have with the current town website? (i.e. navigation, lack of information, etc.)

What should be included on the homepage of the new website? (select all that apply)

☐ Calendar   ☐ Agendas and Minutes

☐ Recent News   ☐ Picture Slideshow

☐ FAQ   ☐ Other: _____

Which features would you like to be added?

☐ Alert Center (emergency notification)   ☐ Resource Directory

☐ Job Postings   ☐ FAQ

☐ Online Form Submission   ☐ Opinion Polls

☐ Licenses and Permits   ☐ Other: _____

☐ Document Center

What about the design would you like to be changed on the new site?

Additional Comments:

APPENDIX I

The Survey that was sent to town employees is on the next four pages:

We are a group of students from Worcester Polytechnic Institute conducting research in collaboration with the Nantucket Town Information Technology Department regarding the creation of a new town website. This is an anonymous survey and no personal identifying information will be collected.

All questions are optional.

Any questions/concerns can be sent to jbridges@nantucket-ma.gov

---

Gender:

○ Male

○ Female

Age:

○ 0-18 years

○ 19-40 years

○ 41-60 years

○ 61+ years

Which department(s) are you an employee for?

[   ]

What information do you get most frequently contacted for, if at all (ie visitors asking where bathrooms are, residents asking where to find a specific form, etc)?

[   ]

How often do you update the information for your department on the website?

○ Never

○ Less than Once a Month

○ Once a Month

○ 2-3 Times a Month

○ Once a Week

○ 2-3 Times a Week

○ Daily

Rate the below aspects of the current town website:

	Poor	Fair	Good	Very Good	Excellent	No Opinion
Tools/ Apps (i.e SeeClickFix, online payments, etc.)	○	○	○	○	○	○
Content (meeting agenda, budget information, etc.)	○	○	○	○	○	○
Look and Feel of the Website	○	○	○	○	○	○
Images found on the website	○	○	○	○	○	○

Click on the area your eyes first notice when you look at the current town website's homepage:
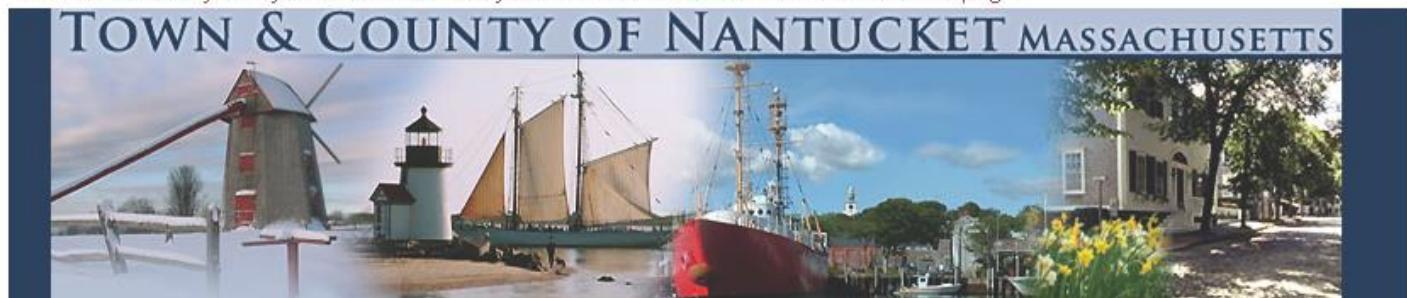
TOWN & COUNTY OF NANTUCKET MASSACHUSETTS

About Our Community
Departments
Boards & Committees
Meeting Calendar
Agendas & Minutes
Budget Information
Schools
Online Payments
Video On Demand
Contact Us
Subscribe to News

SeeClickFix
Discover & Report Issues In YOUR Community!

ping4alerts!

[ ] Search

RESIDENTS   MORE

- Emergency Management
- Master Plan
- GIS Special Maps
- Council on Aging
- Voter Registration
- Town Policies and Regulations

- Census and Demographics
- Online GIS and Maps
- Tax Collector
- Commission on Disability
- Town Meetings & Elections
- Veteran's Services

BUSINESSES   MORE

- Procurement
- Planning and Land Use Services

- Licensing & Permitting
- Taxi, Charter, Limo & Tour Vehicle Regulations

VISITORS   MORE

- Visitor Services
- Taxi Rates
- Getting Around

- Chamber of Commerce
- Important Links For Boaters
- Taxi Comments / Suggestions

OF INTEREST TO ALL   MORE

- Hummock Pond Road Bike Path
- Nantucket Cottage Hospital
- Worcester Polytechnic Institute Projects
- Massachusetts Division of Fisheries & Wildlife
- Nantucket Land Bank
- Public Transportation
- Wastewater Action Plan
- Annual Town Reports

- Nantucket and Madaket Harbors Action Plan
- Nantucket Memorial Airport
- Nantucket Atheneum
- Wannacomet Water
- Appraisal Vision Online Database
- Town Manager Website
- Online Parking Ticket Payments
- Code of the Town of Nantucket

Town News & Notices

Overnight Parking Allowed in Town Pier Lot
Posted 10/28/13

Parking & Enforcement Changes in Town Core District
Posted 10/28/13

Taxi Waiting List Updated as of October 21, 2013
Posted 10/21/13

MORE

Upcoming Meetings

October 2013

Sun	Mon	Tue	Wed	Thu	Fri	Sat
29	30	01	02	03	04	05
06	07	08	09	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	01	02
03	04	05	06	07	08	09

Wed October 30

8:00 AM
Capital Committee
PSF, 4 Fairgrounds Rd., 2nd Flo

12:00 PM
Historic District Commission
SUBMISSION DEADLINE
2 Fairgrounds Road

3:30 PM
Nantucket Memorial Airport Commission
PSF 1st floor, Community Meetin

4:00 PM
Nantucket Conservation Commission
P.S.F. - 4 Fairgrounds Rd., Tra

MORE

Public Hearings

What features on the current site do you like? (select all that apply)

☐ Online Payments   ☐ Calendar

☐ Service Request   ☐ Agendas and Minutes

☐ Emergency Notification   ☐ Town News Notificaitons

☐ Video On Demand   ☐ Other: [_____]

What features on the current site do you dislike? (select all that apply)

☐ Online Payments   ☐ Calendar

☐ Service Request   ☐ Agendas and minutes

☐ Emergency Notification   ☐ Town News Notifications

☐ Video On Demand   ☐ Other: [_____]

If you strongly like/ dislike a feature, please explain why:

[   ]

Is there any information that is not on the current town website that you would like to be added?

[   ]

What problems do you have with the current town website? (i.e. navigation, lack of information, etc.)

[   ]

What should be included on the homepage of the new website? (select all that apply)

☐ Calendar   ☐ Agendas and Minutes

☐ Recent News   ☐ Picture Slideshow

☐ FAQ   ☐ Other: [_____]

Which features would you like to be added?

☐ Alert Center (emergency notification)   ☐ Opinion Polls

☐ Job Postings   ☐ Bid Postings

☐ Online Form Submission   ☐ Blog

☐ Document Center   ☐ Personalized Homepage

☐ Resource Directory   ☐ Social Media

☐ FAQ   ☐ Other: [   ]

What about the design would you like to be changed on the new site?

[   ]

What information would you like on your department page?

☐ Events

☐ Picture Slideshow

☐ Documents

☐ FAQ

☐ Other:
[   ]

What would you like to be different about the department pages on the new website?

[   ]

Additional Comments:

[   ]

[>>]