



Client: The Metropolitan Transportation Commission

Project: Development of the 511.org Traffic Website

Challenge

Section 508 of the Rehabilitation Act of 1998 requires federal agencies to make information available via the web accessible to people with disabilities. These regulations were designed to encourage web development that removes barriers that people with disabilities face when obtaining information using electronic or information technologies.

But in some cases, web developers have felt that they were unable to create accessible versions of some information. Real time maps are an example of a technology that has been a conundrum to web developers. Many industry leaders have decried the near-impossibility of creating maps that are Section 508 compliant.

As a result, most agencies who have developed sites using these technologies have had to exercise a clause in the regulations that allow them to claim that the cost and complexity of trying to present this type of information accessibly would present an “undue burden” to the agency.

However, the agencies are still required to present a manner for the user to access this information, generally in the form of a contact person who can be reached to ask about the information contained in the map. This adds cost to any project support as well as being decried by the disabled community as not an equivalent, since the support is generally not available in the same 24/7 manner that the website is.

Background

According to the Texas Transportation Institute, the San Francisco Bay Area is home to the nation’s 2nd worst traffic congestion, resulting in pollution, lost productivity and stress for the region. To deal with this, the Metropolitan Transportation Commission (the regional government) set out to create a regional real-time traffic web site to aid commuters in making decisions about current traffic conditions and routes for travel. Studies have shown that informed travelers make different travel decisions and have less stress while traveling .

Due to recent changes in the government regulations regarding the development of websites built using both Federal and California State monies, the region also needed to make the site accessible to people with disabilities. The resulting site, <http://traffic.511.org>, was designed to be accessible to all users, including those with visual impairments.

“But blind people don’t drive,” many people said. But blind people *do* drive, if indirectly. In fact, the cost of transport to people who cannot see well enough to pilot a vehicle is enormous. Many travelers in the Bay Area need to travel long distances, often by cab – which charges by the mile and by the minute. They may be involved in car pools or rideshare situations. These people can’t afford to be stuck in traffic. And certainly, they have every reason to want to have accessible traffic information.

Quintus Advantage

Brought together on this project by Parsons Brinkerhoff Farradyne, Quintus Design of Boulder worked with Gray Hill Solutions of Seattle and developed a unique approach that did not simply meet, but exceeded the California State and U. S. Federal Guidelines for accessibility. Quintus had the advantage of understanding not just the rule of the law, but the intention behind it. In addition, Quintus understands the value of working with the team directly, not just delivering a document without working to help implement the recommendations.

The challenges of presenting map information in a format useful to the blind were great. In this ground breaking web site, the firms decided to focus not on how to present a large, cumbersome data set to the user, but instead to focus on what a user on this site would be trying to find out. Instead of the entirety of the data set, the firms focused on user goals. Since "We knew what users wanted to know from the map." said Quintus partner Erika Noll Webb. "They didn't need to know all of the traffic conditions; they only needed to know about the routes that were relevant to them. To solve that problem, we simply decided to let them ask the system for the specific data they needed."

Because a significant portion of the population has some mild impairment of vision or a color deficiency of some type, the firms also worked to make the graphical map interface usable by as many people as possible. To improve the usability of the map to all users, the firms created a group of settings on the interactive map that made the map easier to read for color-blind and low-vision users.

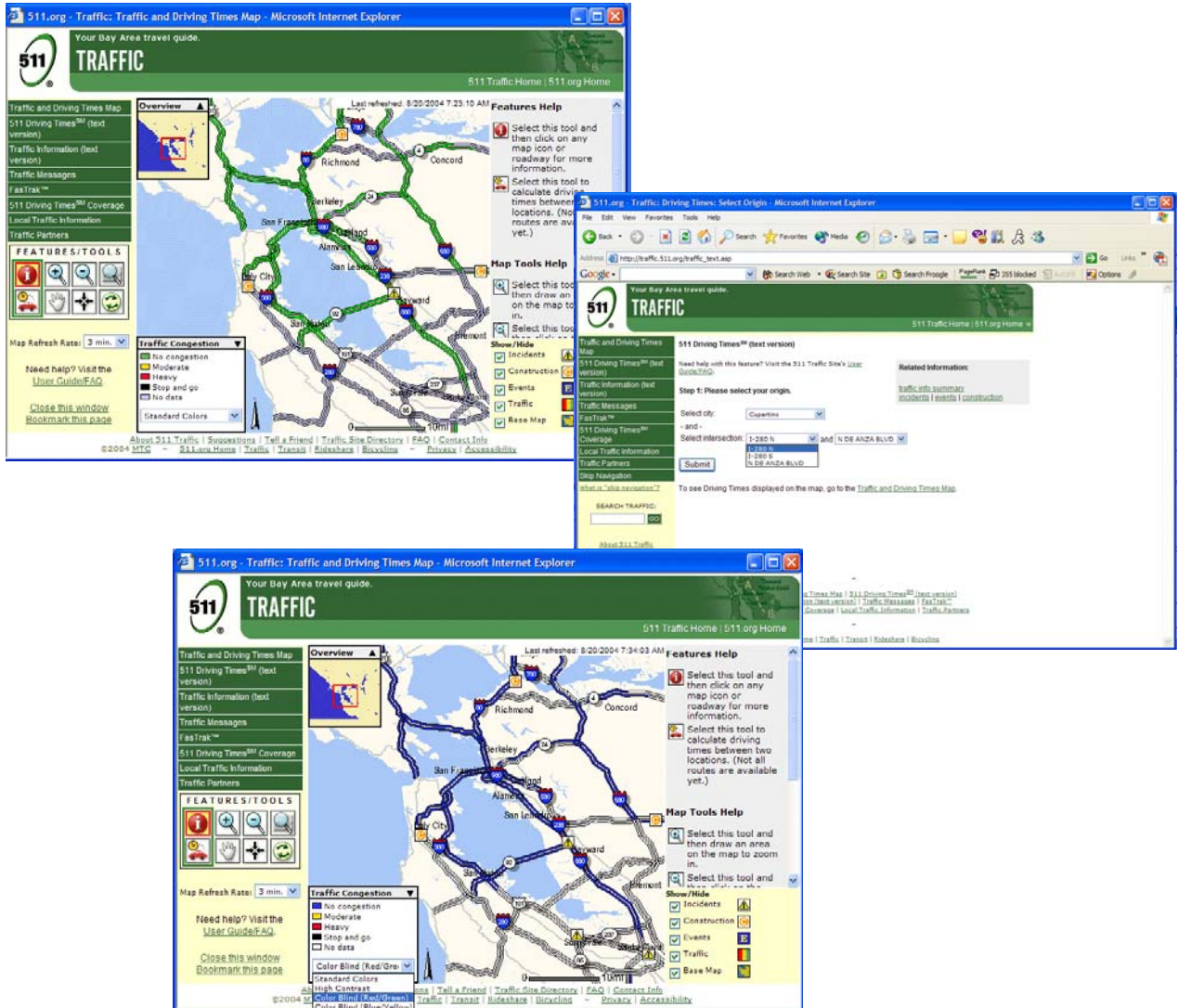
Technology and Tools

The solution that they developed to the problem of presenting real time map data was to create a text-based system in addition to the graphical map data. This text system would allow all users to get specific traffic data about a trip in a text format, with multiple route options where they were available. This text system was developed using the same dataset, so that it is accurate in real time, just as the graphical equivalent is.

In addition, this system would allow users who could not see the screen, users with specialized software that literally reads the screen, to get functionally the same information as sighted users do on the graphical map. All users of this site can access real time information about traffic conditions, either on the map, or in text.

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In addition, Gray Hill Solutions and Quintus Design worked to ensure that other users would be able to fully access the site, including users with motor impairments, by ensuring that information could be accessed from a keyboard, without requiring the use of a mouse.



The Results: An Accessible Real Time Traffic Site

This emphasis on trying to develop a site that was usable and accessible to all users was accomplished without significant increase to the development budget or development cycle. Focusing on this development process has additional benefits, since accessible design is more likely to be cross-platform compatible. This reduces future development costs for the client.



QUINTUS DESIGN LLC

2017 10th St.
Suite B
Boulder CO 80302

Phone: 303.449.5020
Fax: 303.449.7045
E-mail: info@quintusdesign.com

Author Information

Erika Noll Webb, Ph.D. –

Erika is an expert in Universal Design and Usability. In usability issues, she can dramatically reduce your development and maintenance costs by ensuring that your products are designed from the start to be easy to use by your customers. Your development time will be sped up by helping you quickly get to a feature set that will meet your customers' needs and expectations. Erika is specifically skilled in designing a user interface that is intuitive or familiar to your customers. By matching technology to users, she can optimize your product design early, saving time and money. Erika applies the best practices of leading-edge usability design, along with a broad knowledge of current technologies. This process will help you avoid costly implementation errors.

In addition, with her background in neuropsychology as well as usability, Erika has developed an expertise in the design of high-tech products for accessibility to people with different disabilities. She has studied the area of accessibility extensively and has trained at the Trace Research & Development Center, which is a part of the College of Engineering, University of Wisconsin-Madison. She is an expert Accessible Web Design and is a frequent speaker on issues regarding accessibility and technology. She regularly leads seminars and workshops on how to make products more accessible to people with disabilities. Erika has worked with a number of clients on both design and analysis of the accessibility of their products and has performed accessibility evaluations of products for *Fortune* 500 companies. She has designed the web, software and telephony accessibility of products produced for a number of government agencies.