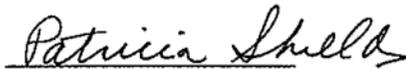


**State of Texas Municipal Web Sites:
A Description of Website Attributes and Features of Municipalities with Populations
Between 50,000-125,000.**

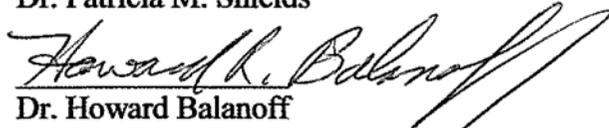
**By
Jeffrey S. Goldberg**

**An Applied Research Project
(Political Science 5397)
Submitted to the Department of Political Science
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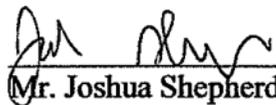
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Abstract

The purpose of this research is to describe the attributes and features of government web sites of Texas cities with populations between 50,000-125,000. Regardless of a city's size, the internet and government websites have become strategic tools to deliver government services and information online to all citizens. Although many government website reviews and assessments have been conducted for the United States and worldwide cities, there have been no studies which have specifically examined the websites of smaller cities in the State of Texas.

Descriptive categories identified in the literature led to the development of a conceptual framework. The framework allowed the researcher to identify specific website attribute criteria and develop a coding tool to conduct a content analysis of 31 municipal websites within the population range.

The overall presence of the website attribute criteria varied. The most common features found included consistent navigation functionality and the availability of public meeting minutes, budget information, and public agency/official contact information. Online forms and payment services for traffic fines and utilities were also prevalent on most websites. Two areas requiring significant improvement throughout were Security/Privacy policies and accessibility issues regarding compliance with the American Disabilities Act, Title II and Section 508.

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Chapter 1: Introduction

E-government is “the delivery of government information and services online through the internet or other digital means” (West 2004, 16). The most common delivery medium is the government website, which provides citizens, government agencies, and businesses the ability to send and receive information electronically twenty four hours a day, seven days a week.

Websites should have a one-stop-shop function designed to integrate services and information under one umbrella (Ho 2002, 436). Increased efficiency and reduced operating costs are generally lauded as typical benefits realized by governments who implement websites, but the time and costs savings to citizens are no less important. This is true because the ability to conduct transactions online that previously required face-to-face contact with a government representative results in both time and cost savings to citizens (Edmiston 2003, 21-23).

A government website demonstrates a city’s desire to use internet technology to deliver a variety of services and information to its citizens. When properly designed, the site can also serve as a vehicle to encourage citizen participation. Foutz (1993, 6) describes citizen participation as “citizens’ attempts to influence policy decisions.” Access to policy makers via electronic mail, public forums, blogs, real-time public meetings, and electronic voting are just a few examples of how policy decisions can be directly influenced by citizens using government webs sites.

As with the development, construction, and maintenance of any project, creating a successful government website requires proper planning. Kirchhoff (1997, 25) confirms this view by noting that government web sites must be well thought out and fully populated with applicable data before any page is posted to the public. Incomplete pages or those identified as being “under construction” need to be avoided, and as Kirchhoff (1997, 6) points out, a

distinctive feature of these web sites is their varied use of development technologies, presentation scheme, and general functionality even though they provide similar content.

The specific design and unique features of a government website determine how effectively it delivers services to and receives information from its citizens. Kim et al (2007, 1) supports this view by emphasizing the importance of website design and user interface tools as directly attributable to the success and utilization of a government website. They noted that even experienced computer users become frustrated with such elements as illegible dialog boxes and inconsistent navigation functionality. Not surprisingly, variations in website designs cause users to respond differently to the same information.

The level of effectiveness of websites is often related to usability and aesthetic features such as navigation tools, colors, fonts, graphics, and page lengths. Users expect consistency of these elements throughout all areas of the website. As the proliferation of government web sites on the internet continues and the cost of personal computers comes down, the number of citizens who are first time users of government websites can be expected to increase. Consequently, ease of use and reliable/logical functionality is particularly important. Zhang and Von Dran (2002, 9) maintain that a website users' first impression will determine whether they consider the site worthy of a return visit. From a business web site perspective, Marcos (2002, 2) believes usability increases customer satisfaction and provides for a more productive web site experience while also building trust and loyalty. The same concepts are easily translated to a successful government website. The easier a government website is to use, the more user friendly it will be for citizens, which subsequently creates trust in the medium, encouraging return visits and potentially increased utilization and participation.

Rutgers University, E-Governance Institute Studies

As part of Rutgers University, The E-Governance Institute examines how the internet and information technology influences public sector productivity and performance. Recognizing the need for a relationship and partnership between the public sector and private citizens, the institute gathers and shares data to help increase the understanding of how e-governance can build and strengthen that partnership. The E-Governance institute identifies the principles of e-governance as:

- Building services around citizens' choices
- Making government more accessible
- Facilitating social inclusion
- Providing information responsibly
- Using government resources effectively and efficiently saving taxpayers money

(E-Governance Institute Website, Rutgers University).

The internet and government websites have become strategic tools to deliver government services and information online to citizens. As a means to measure whether these principles were being incorporated into government website design, the E-Governance institute in 2003 conducted and published its first study of digital governance practices in large municipalities worldwide. The institute chose cities based upon the 2002 "Internet Indicators" statistics compiled by the International Telecommunication Union (ITU, 2002). The ITU is an organization affiliated with the United Nations (UN). The ITU listed the online populations for 196 countries. Using the ITU data, the E-Governance Institute selected 98 countries with the highest percentage of Internet users, and then examined the largest city in each of those countries. Both of the People's Republic of China special administrative regions; Hong Kong

and Macao, were added to the 98 cities selected because they had been considered independent countries for many years and had a high percentage of internet users.

The E-Governance Institute evaluated each city's web site in terms of digital governance. The institute defined digital governance as including both digital government (delivery of public service) and digital democracy (citizen participation in governance). The research analyzed five key areas of city government websites to include *usability (design and functionality), content, services offered, citizen participation, and security/privacy* (Holzer and Kim, 2003, 7). A longitudinal study conducted in 2005 and 2007 using the same methodology and criteria as the original 2003 study concluded that worldwide e-governance practices required ongoing research.

Further research in 2008 by the E-Governance Institute resulted in its first assessments of digital governance exclusively in the United States by separately evaluating and ranking state and large municipal websites across the country¹. These assessments examined the same five key areas as the three previous worldwide studies. The municipal website research focused on the largest and the second largest cities in each of the 50 states based on their population size, along with Washington DC. (Holzer et al, 2008, 9).

Purpose

Government websites are also present in smaller municipalities across the country. Although their populations are smaller, their requirement to meet E-Governance principles is no less important than larger cities. There have been no studies which have specifically examined the websites of smaller cities in the State of Texas. The purpose of this applied research project is to describe the attributes and features of government web sites of Texas cities with populations

¹ This researcher served as one of the independent evaluators for the 2008 Municipal Website Study and was recognized in the report's credits.

between 50,000-125,000. To accomplish this task, a scaled down version of the E-Governance Institute's assessment criteria are used. This research differs from the E-Governance Institute's studies in one important respect. It does not rank websites from highest to lowest in performance; but rather it describes the operational state of each city's website regarding their usability, content, service, citizen participation, and security. Additionally, a summary of findings and recommendations for further studies will be provided.

Summary of Chapters

Chapter 2 explores the literature describing attributes and features of city websites and provides background for the conceptual framework that consists of five descriptive categories based on the research framework and criteria used by the E-Governance Institute in all of its studies. The conceptual framework acts like a map and gives coherence throughout the research (Shields and Tajalli 2006, 2). The five descriptive categories are *usability (to include design and functionality)*, *content*, *services*, *citizen participation*, and *security/privacy*). Chapter 3 introduces this study's methodology and describes procedures used in the content analysis of Texas City websites. Chapter 4 discusses the results of the content analysis of the Texas City web sites and provides a comprehensive descriptive review of their features and functionality. Simple descriptive statistics are used to summarize the findings. Chapter 5 encapsulates the applied research project findings and identifies notable features of certain cities as well as recommended improvements where warranted.

Chapter 2: Literature Review

Introduction

Since the advent of the internet and the first government websites, substantive scholarly research has been conducted to examine and evaluate these sites. The criteria and methodology for these studies is varied, however most evaluate a website's performance regarding their appearance and ability to deliver a wide range of electronic information and services to citizens.

Purpose

This chapter reviews literature describing various functionalities and features of government websites. The literature underpins the conceptual framework, which consists of five descriptive categories modeled from the methodology and criteria used by the Rutgers E-Governance Institute in all of its studies. The first section examines *usability, design, and functionality* attributes characteristic of quality web site design. Second, website *content* is discussed identifying the extent to which governments are providing electronic access to a wide array of public information. The third section identifies various *services* offered to citizens; many of which previously required face to face contact with a government representative but which can now be conducted and/or accomplished online. The fourth section discusses the subject of *citizen participation* and how government websites can serve as a vehicle to assist citizens to become more actively involved in their government's activities. The fifth section addresses *security and privacy* issues regarding both website content and personal information.

Usability, Design, and Functionality

Government websites require the same basic *usability, design, and functional features* users expect to find on any website genre. *Navigation menus, search tools, site maps*, effective use of *colors, fonts and graphics*, and consistent functionality are all very important.

Excluding entertainment websites, Zhang et al (2000, 1367-1369) empirical study of user's views and perceptions of website features showed intuitive *navigation tools* were among the top five most important elements of a good website. When examining *content* and design variables on commercial websites, Grandon and Ranganathan (2001, 1) note that navigation difficulty adversely affects sales on commercial websites and that four of five potential customers did not pursue or complete online purchase transactions because of perceived poor website design and functionality.

Brower (2004, 413) defines a *home page* as the initial entry point for a website, which serves to establish the site's identity and purpose. Brower continues by describing a primary website navigation tool called the *persistent navigation tool (PNT)* which is a menu based upon a set of static links that are consistent in appearance and function on every page of the website. The static PNT menu is located in the same place on every page, providing links to the basic information and services area and serving as a path to the functions and content of the site. For English language based websites, *Left* navigation menu design is the most common because it correlates to user's orientation of reading from left to right. Users look left, click on a desired link, and then keep reading new content starting on the left. *Top* navigation menu design is the second most common method. An advantage of top navigation is that it leaves more room for content below (Kalbach and Bosenic 2003, 5).

Although PNT's are important, users should not be forced to rely heavily on primary navigation but instead have "jumping points" to move to desired locations throughout the website (Shahabi et al 1997, 2). These navigational jumping points, also called secondary navigation tools, are helpful when users cannot find desired information using primary navigation. If a user clicks from the home page of a city government website to go the budget agency and is then provided a "pull down menu" of all the subordinate agencies, they are using a secondary navigation (Brower 2004, 413). Pull down menus are effective for both PNT's and secondary menus. Yu and Roh's (2002, 931) website menu design research concluded that pull-down menus provide users with the most flexible path to navigate websites.

Each website should also allow provide users with a *search tool* to help expedite the location of their desired information. While there are sophisticated search engines for experienced web users, it is acceptable to provide users with a tool to conduct simple key word searches without providing more advanced features. Searches should not be case sensitive and the search tool should be designed to respond to terms typically entered by users. On sites where there are many users performing similar searches, it is best to provide search templates. In the end, search results should be useful and usable (Hearst et al 2002, 42-43).

Although website *colors, fonts, and graphics* vary from site to site, Ivory and Hearst (2002, 369) advise using a minimum number of colors on web pages because extensive colors can be distracting. Users are also distracted when more than one graphic is displayed on a page. Considering the wide range of users, Ivory and Hearst also recommend using a minimum font size of 9 points and consistent page lengths throughout the site ensuring that data is not truncated. Regarding color selection, Dreze and Zufryden (1998, 10-11) also caution against the use of too many colors, particularly background colors, which they say can come at a cost for the

end user. For example, they advise that complex backgrounds can slow down transmission and display times because more information needs to be exchanged between the Web server and the Web browser. Importantly, not all end user computers have the same graphics capabilities. Dreze and Zufryden also suggest a webpage background color be left undefined by website developers because it will cause the end user's web browser to use whichever user defined color they have chosen on their computer as the default background color. This design does not slow down the Web surfing process because no color/graphic information is transferred. Ivory and Hearts (2002, 3670) explain that graphic issues present special challenges for website developers. For example, although larger graphics produce a desirable display, the large file size will increase both download and browsing time.

In their first "Assessment of Municipal Web Sites Throughout the World" in 2003, the Rutgers University E-Governance Institutes stated that a website's *usability* was directly related to its level of user friendliness (Holtzer and Kim 2003, 31). In that study, the city of Hong Kong achieved the highest rating for usability because all its website pages used consistent *colors*, had consistent *page lengths and formatting*, effectively used *navigation* bars, and had links to their *homepage* on every page (Holtzer and Kim 2003, 56). Regarding page length, the 2003 Rutgers assessment also showed that 52% of cities in Europe had *alternative file versions (i.e., doc or pdf)* available for download for documents that were more than three to four screens long. At that time, only 24% of cities in Asia and 20% in South America provided this feature (Holtzer and Kim 2003, 59).

Content

Another major area of government website evaluation is its *content*. The United States government developed an E-government strategy in 2002 with the primary goal to make it less complicated for citizens to interact with the government. The strategy's vision moved away from the traditional bureaucracy-centered government paradigm and focused instead on becoming citizen-centered and results-oriented. Opportunities to improve content and delivery of services formed the framework for the strategy, the results of which can be found in the varied content available on government websites throughout the country (OMB 2002, 4-5).

According to President Obama's Presidential Transition Team, many government websites were treated as information technology projects rather than a core government business function (United States Federal Web Managers Council, 2008, 2). The team recommended the development of government wide guidelines for disseminating content in universally accessible formats such as news feeds, videos, pod casts etc. Furthermore, the transition team concluded government agencies should appoint an editor-in-chief for every website they maintain as do popular commercial websites. The editor-in-chief would develop and enforce website policies and ensure the site is effective in helping users to find the information they require. Additionally, the team recommended that government agencies conduct regular content reviews to ensure content is accurate, relevant and written in a style all citizens would understand. (United States Federal Web Managers Council, 2008, 2).

The primary purpose of all websites is to provide content. Consequently, regardless of how advanced a website may be, if its content is stagnant, difficult to navigate to, or if the information is not correct, then it is not fulfilling its purpose. In studies of government websites, the Rutgers E-Governance Institute examined five key elements of content, to include access to

contact information, public documents such as *annual operating budgets, job vacancies, city mission statements or charters, agency or department mission statements, and public calendars*. Examining contact information, the E-governance institute searched for *general information* about each agency to include physical address, office hours, point of contacts and phone numbers. The ability to read website content in *different languages* was also evaluated. (Holtzer and Kim 2007, 29).

Additionally, all of the Rutgers University E-Governance Worldwide and United States studies² also examined *disability access* issues regarding whether websites provided “Bobby Compliance” (disability access for the blind, <http://www.cast.org/bobby>) or for deaf users via a telecommunications device for the deaf (TDD) phone service. Bobby certification is based on standards defined in Section 508 of the Rehabilitation Act (29 U.S.C. 794d), as amended by the Workforce Investment Act of 1998 (Section 508, 1998). For a website to be “Bobby Compliant”, it must 1) be accessible, 2) the pictures must be labeled with “Alt. Tags” which verbally describe images, and 3) have pictures that convey some type of vital information (Spencer 2001, 41). Spencer notes that if website design considers the needs of the disabled, minimal additional development costs are necessary because disabled users use the same programming components of a website as any other user, only employing different methods and procedures to utilize it. For example, Spencer notes that websites must be developed to utilize assisted software technology to interface with screen readers such as JAWS and other assistive equipment such as TDDs (Spencer 2001, 4). Results of Spencer’s study indicated that although most State of Texas agency websites utilized assisted software technology, only 64% were Bobby Certified (Spencer 2001, 41).

² DIGITAL GOVERNANCE IN MUNICIPALITIES WORLDWIDE: An Assessment of Municipal Web Sites Throughout the World – (Conducted by the Rutgers University E-Governance Institute in 2003, 2005, 2007, 2008) .

The W3C Web Accessibility Initiative <http://www.w3.org> develops strategies, guidelines, and resources to help make the Web accessible to people with disabilities. Solis (2000,10) observes that the W3C guidelines consider two general themes when making a determination: 1) ensuring graceful transformation and 2) ensuring that the content is understandable and navigable.

Due to diverse cultures in many cities, the Rutgers E-Governance Institute also examined websites to assess if they offered their content in more than one language. Referencing time sensitive issues, the institute also looked for emergency management features or alert mechanisms such as terrorism alerts or severe weather warnings (Holtzer and Kim 2007, 29).

Services

A significant advantage for citizens using government websites is the ability to receive services that previously required fact to face contact with a government employee. A vital component of successful e-governance is the inclusion of government services. President Obama's Presidential Transition Team supported this view by insisting government websites identify their core customer's tasks, and establish service standards and performance benchmarks for completing those tasks (United States Federal Web Managers Council, 2008, 2)

A primary goal of a government website should be to provide services and information that allow citizens to perform a variety of traditional government tasks at one online location rather than going to a specific brick and mortar office to complete paperwork (Layne and Lee 2001, 126-133). From the perspective of the citizen user, the concept of one-stop-service on a government website is a logical expectation considering the proliferation of retail shopping stores that provide everything from groceries to hardware supplies. Not surprisingly, the

advancement of the internet is directly affecting the way that government agencies provide services online to the extent communication between the citizen and government has transitioned to the citizen as an active rather than passive user (West (2004, 17).

Implementation of services on government websites has been a “work in progress”. Kaylor et al (2001, 1) report on United States Cities E-government services assessed functional areas to include *payments, registration, permits, licenses, documents available, applications, e-commerce/e-procurement*, and miscellaneous other areas to include *online surveys and e-meetings*. For the purposes of their study, they defined E-government as “the ability for anyone visiting a city website to communicate and/or interact with the city via the Internet in any way more sophisticated than a simple email letter to the generic city (or webmaster) email address provided at the site.” Their findings remarkably showed a large number of cities that had no e-government at all based upon their definition. Specifically, the majority of those without e-government were smaller cities, although it was noted that improvements and advances in the use of web technology were expected (Kaylor et al (2001, 7).

The Digital Communities Organization (conducted its first “Digital Cities Survey” in 2001 to examine how city governments utilized digital technologies to improve the delivery of services to their citizens. Using similar criteria used by Kaylor et al (2001), the annual survey groups cities into three categories based on population: more than 250,000, 125,000-250,000, and 75,000-125,000. Results and rankings from 2001-2009 are listed on their website <http://www.govtech.com/dc/surveys/cities/89/2001>.

The Rutgers E-Governance Institute recognized Kaylor et al (2001) and the Digital Communities Organization’s digital cities surveys as good examples of attempts to measure whether and how digital government investments are resulting in improved services for citizens

(Holtzer and Kim 2003, 18). The Rutgers website assessments similarly evaluate services that permit citizens to interact with city governments to include *downloading and submission of online forms, service requests, filing of complaints, and permits/licenses applications*. *Procurement services and e-bidding are also evaluated* which allow potential contractors to access *requests for proposals* and bid for city contracts online. Other transaction services evaluated by the Rutgers studies included the ability to *pay local taxes, public utility bills, and parking tickets online*. In some cases, cities were required to develop new capabilities to accept payment for municipal services and taxes. There was also a category to determine whether users could *register or purchase tickets to social events in city halls or arenas* (Holtzer and Kim 2003, 34).

In a more rigorous interpretation of online e-government service delivery, West (2005, 4) does not consider a service completely digital unless the entire transaction can be completed online. For example, West (2005) does not consider printing a form and mailing it to an agency as a fully executable online service.

The inclusion of services on government websites is beneficial on two levels. First, it saves time by allowing users to perform functions that previously required either face to face contact with a government representative or a delay waiting for a response in the mail. Second, it saves taxpayer money because it reduces the number of government employees previously needed to support the citizen in person. While some applications of e-government are more expensive than others to implement, putting many services online is considerably less expensive (Al-Kibsi et al 2001, 66-67). Their analysis showed that 15% of e-government's cost benefits are the result of technology solutions, with the remaining cost savings realized from reduced delivery of services. One example of savings was the cost of renewing a vehicle registration

online in Arizona being reduced to \$1.60 which was four times lower compared to when citizens had to conduct the transaction in person. Another example cited was the internal revenue service processing electronic tax returns for 40 cents compared to \$1.60 for a paper return. While these examples demonstrate effective and beneficial returns, their research showed that online delivery of government services typically saves from 20% to 25% compared to performing the same services in person.

Citizen Participation

Foutz (1993, 1) defined citizen participation as “citizens’ attempts to influence policy decisions and as a means by which citizens input is incorporated into the decision making process.” While there are varied ways by which citizens can participate and make a positive impact on government, online citizen participation is the most recent method.

Citizen participation features of government websites allow citizens to have an active role in government. Chadwick and May (2003, 276-281) describe three ideal models and the level of citizen empowerment each provides. A government website based upon the *Managerial Model* uses information technology and the internet to “push” information out to citizens. This pushing concept is a one-way-street methodology to disseminate information and provides no option for citizens to send information back electronically. Chadwick and May (2003) explain that government officials have exclusive authority when determining what type of information will be made available through the website. In the Managerial model style, government strives to provide the information and services it has but in a more efficient and cost effective manner. Efficiency is simply defined as increased delivery speed at reduced cost to government. Because the “push” concept places a higher value on content verses website navigation functionality, data

may not be stored and optimally organized making it more difficult for some citizens to locate. Regardless, since citizens are seen as passive recipients on this type of government website, they are considered left on their own when attempting to locate the information they seek.

Chadwick and May (2003, 276-281) describe the beginning of citizen involvement in the *Consultative Model*. Users are still passive in this model regarding the information they are able to access and might be offered the opportunity to respond to survey questions or be asked to participate in specific government forums. In this way, they are potentially able to influence future changes to website design. Although involved at a higher level than the managerial model, the level of citizen participation in the consultative model is limited to the specific questions asked by government officials.

When conducting research regarding the definition of citizen participation, Raffray (1997, 17) noted that “decision making” as a form of participation was absent. Considering other identified models such as “citizens-as customer” and “citizen as owner”, Raffray (1997) thought it remarkable that citizen as “decision maker” was not mentioned as a form of citizen participation. But Chadwick and May (2003, 276-281) do recognize the *Participatory Model*, explaining that its premise is for information to flow between government and citizens. In this model, social interaction is mandatory and all available technology must be utilized. The participatory model also includes features such as direct feedback via email allowing citizens to directly communicate with government officials and agencies. Some government websites provide online bulletin boards and chat rooms where opinions and views can be shared between citizens as well as provide for a direct line for citizens to communicate with government representatives or agencies. Other features such as opinion polls and e-meeting forums encourage citizens to become active participants in policy making decisions. In all of these

activities, citizens are given the opportunity to take a more active role by becoming part of the process instead of just being a spectator (Steyaert 2000, 9-10). In his 2004 study, (West 2004, 17) describes this more active role as the implementation of “interactive democracy.” It manifests itself in the form of public outreach accomplished through a variety of accountability measures. In this stage, the government website moves beyond the delivery of services into a stage he calls “political transformation.”

Government websites that allow users to become active participants foster an environment where trust can be established between citizens and government. Regarding the goal of building citizen trust in e-government, Tolbert and Mossberger (2006, 356-357) provide a distinction between the *Entrepreneurial Approach* and the *Participatory Approach*, both of which correlate to the concept of reinventing government. The entrepreneurial approach focuses on customer service and incorporates all the various elements of efficiency related to the “one stop shop” concept. The participatory approach is similar, but ensures citizens also have the ability to effectively communicate amongst themselves or with government officials through website tools such as *chat rooms*, topic forums, *email*, and “*real time*” *public meetings*.

A subtle but important distinction is made by Kakabadse et al (2003, 47) in recognizing that citizen participation in an electronic democracy can be enjoyed and taken advantage of only by individuals who have access to information technology and the Internet. Van Benschoten (2000, 4) recognized a worrisome divide between those individuals who have access to the internet and those who do not. As e-government becomes the norm, it is the government’s responsibility to provide the public with access to computers by increasing funding for schools and public services such as libraries. Furthermore, it would be wrong to assume that if the government simply provided computers and high speed internet access to schools and public

agencies, that effective utilization by users would be automatic. For that to be realized, proper education would also be required. Uma (2000 6-8) believes that a computer literate population and affordable basic internet access for all citizens is essential for effective implementation of e-governance. He also states that a “more informed citizenry is in a better position to exercise its rights, play its roles, carry out its responsibilities, and define its relationship to others”.

Weathersbee (2008, 10-11) supports this view when she also recognizes that the digital divide in schools is more than just the difference between those who have access to technology and those who do not. Weathersbee also notes that there is a socioeconomic divide that, even with government funding of computers and technology in schools, cannot be easily solved.

The term digital divide was first used in the 1990’s to describe the disparity between those with access to computer technology and the internet and those without. Although originally attributed to the high cost of computer technology, (McKinnerney, 2004 9-10) maintains that the reduction in prices of computers altered the definition of digital divide from poor to rich individuals to that between advanced and developing countries. Dewan and Riggins (2005, 300) state those who are technologically, sociologically, or economically disadvantaged may not have access to information technology (IT) and accordingly create a separation between themselves and other individuals who make IT a part of their daily life.

Regarding access to the internet, Kim et al (2007,1) declare that the “the number of Americans using the internet rose from 58% in 2002 to 70% in 2006”, also noting that from March 2005 to March 2006, high speed broadband (cable, DSL, satellite) internet access increased from 60 million Americans to 84 million. This is important because internet usage becomes cumbersome and less attractive when users encounter long wait times for basic functions such as downloads and content searches using a lower speed access methods like dial-

up modems. Kim et al (2007,1) also reported that better educated high income individuals represent 79% of broadband internet users who use websites to locate political information. Importantly, that percentage is expected to rise (ibid).

The E-Governance Institute's results clearly demonstrate how a digital divide directly affects some citizens' ability to participate in government related activities using the internet. Results from the 2003, 2005, and 2007 Rutgers University E-Governance Institute's worldwide assessments of government websites reveal that citizen participation continues to be the category with the lowest average score. Although scores have been low, results from each study also indicates cities in developed countries provide their citizens with more opportunities for engaging governmental processes through their web sites. The institute's authors attribute this factor to a digital divide between developed and developing countries, or more specifically between countries who are members of the Organization For Economic Co-Operation and Development (OECD) and non member countries (Holtzer and Kim 2007, 49). Interestingly for example, results from the E-Governance Institute's 2003 study reveal a clear difference in scores for citizen participation between OECD countries and non OECD countries. Summarizing, the average score of all cities combined throughout the world was 28.49 out of 100. The average score for OECD countries was higher at 36.34 while the average score in non-OECD countries was lower at only 24.26. Furthermore, 19 of 28 cities in OECD countries were above the world average while only 16 of 52 cities in non-OECD countries were above the average (Holtzer and Kim 2003, 11).

The Rutgers University E-Governance Institute recognizes that the internet is a convenient mechanism for citizens to interact with their respective government agencies and to decentralize decision-making. However, the institute's' third longitudinal worldwide assessment

of municipal websites in 2007 concluded that online participation was still in the early stages of development (Holtzer and Kim 2007, 31). Unfortunately, the institute's findings indicated very few public agencies offered online opportunities for civic engagement. In making their assessment of citizen participation, they looked to see if city websites allowed citizens to provide *direct feedback to individual agencies or elected officials*. Other variables included whether cities offered information about local government through mediums such as an *online newsletter or e-mail listserv, or whether public meetings were available in real time format such as video streaming*. Their analysis also examined the use of internet-based *surveys or opinion polls* about specific local issues and whether communities allowed users to participate and *view the results of citizen satisfaction surveys online*. In doing so, they noted that some cities used their websites to measure agency performance and published the results. *Online bulletin boards and chat functions* were also observed on some sites for the purpose of gathering input on public issues, and some cities even offered citizens the opportunity to post ideas, comments, and opinions on *electronic bulletin boards* (Holtzer and Kim 2003, 35).

Security/Privacy

Security and privacy are extremely important areas of government website design. The design and operation of government websites and other web-based information systems requires that all aspects of e-government be constructed on a secure infrastructure that guarantees the privacy of its users (Kaylor, 2001).

According to David McClure (2001), many Americans believe that e-government has the capability to improve the way government operates. However McClure and many others have concerns about *sharing personal information* with the government and *third parties* over the

internet, fearing the data will be misused and their privacy diminished. Security breaches involving identity theft adversely affect confidence users have regarding the integrity of government websites. If citizens do not trust the integrity of their government's website, its usage rate and effectiveness will suffer. Website integrity extends beyond the technology applications. For example, although a website might be using *data encryption* to protect user data, government employees who have access to the database may still be able to obtain sensitive data if they are able to obtain the proper privileges, adding another dimension to the issue of integrity.

In 2001, Gallop poll reported to the U.S. House Energy and Commerce sub committee that 63% of internet users were "very concerned" about internet security and privacy issues on government websites (Edmiston, 2003, 30). These concerns are substantiated when, for example previous studies revealed citizen concern for release of driving records, property and deed records, and arrest /conviction records. The study also stated that exposure of system passwords would be catastrophic and lead to massive unauthorized access of personal information.

Security and privacy of government websites was specifically examined by the E-Governance Institute during their assessments of digital governance in cities throughout the world. In their assessments, *privacy policies* were expected to be found on every website's home page as well as every page that collected and accepted data. Privacy policies were further examined to determine if they clearly identified *what data was being collected, explained if access to personal information is shared with third parties* and whether *encryption technology* such as Secure Socket Layer (SSL) was utilized to protect collected personal data ³. Finally, the

³ SSL technology on a website protects users by encrypting sensitive information during online transactions.

assessment looked at whether a government website used *cookies*⁴, surreptitiously allowing public agencies to access data and track citizen's internet habits without their permission.

(Holzer and Kim 2005, 26-28).

The results of the institute's initial 2003 assessment showed that the average score in privacy and security policy in OECD member countries was 3.94, while cities in non-member countries scored only 1.77 in this category. Results indicate that cities in economically advanced countries typically place more emphasis on privacy and security policy than cities in less developed countries. In 2005, the divide grew in this area with the difference between OECD and non-OECD member countries increasing to 4.77. This was the largest difference in mean scores among the five categories assessed during that year. Sadly, the gap increased to 4.9 with the 2007 assessment demonstrating that less developed countries were not addressing the issues of privacy and security seriously.

Conceptual Framework

A review of the literature on the basic features and attributes of government websites establishes the categories of the conceptual framework used in this study and are depicted in table 2.1. In order to describe the features and attributes, descriptive categories are employed. The five descriptive categories are: usability (to include design & functionality), content, services, citizen participation, and security/privacy.

Usability, Design, and Functionality) in this research will focus on the “first look and feel” of a government website. The logical placement of navigation bars and the ease of navigating through the website using search tools are key to a positive web experience. Proper

⁴Cookies are text files, or entries in larger files, utilized to distinguish between visitors to a website, and to track information during multiple visits to a website.

use and placement of colors, graphics, and fonts will also be evaluated because they are very important in maintaining end user interest in the website. The E-Governance institute assessed this area by confirming if all pages of a website were consistent in color and text formatting. They also examined each city's homepage to determine if it was too long (two or more screen lengths) and if alternative versions of lengthy documents such as .pdf or .doc files were available.

Content in this study will focus on items such as meeting minutes, public calendars, agency mission statements, budget information and contract award information. These are common government documents that most citizens expect to easily find on their city's website. The E-Governance institute emphasizes that content is a critical component of any website and that regardless of how technologically advanced a website's features are, if its content is not current or if the information provided is not correct, then it is not fulfilling its purpose.

Services to be reviewed in this study will consist of functions such as paying utility bills or taxes and actions that citizens previously achieved using the US Mail service. Other services to be examined include applying for permits or licenses which previously required face to face contact with a government representative. The E-Governance institute assessment criteria focused on services that allow citizens to directly interact with city government representatives in an interactive manner.

Citizen Participation in this study will be evaluated based upon a city website's ability to provide various tools which allow citizens to communicate directly with government representatives. For example, items such as newsletters, surveys, polls, and email will be assessed. The E-Governance Institute believes this area of e-government helps citizens directly engage in the democratic process. They believe the internet is a convenient mechanism for

citizen-users to engage their government and that it has the potential to decentralize decision-making by both elected and non-elected government representatives.

Security and Privacy concerns in this study will be evaluated by looking at a city website's ability to ensure citizens' personal information is safely secured and encrypted. Privacy warnings and policies should be clearly labeled and users need to be informed that their personal information will not be released to third parties. Users also need to be advised if a web site has enabled cookies so they can decide if they want to proceed utilizing the web site. The E-Governance Institute believes that many cities throughout the world do not take the issue of website security and privacy seriously enough and that security should be an imperative in the development of digital governance.

Table 2.1: Conceptual Framework Linked to the Literature

DESCRIPTIVE CATEGORIES	SUPPORTING LITERATURE
<p>Usability/Design/Functionality</p> <ul style="list-style-type: none"> • Navigation Tools <ul style="list-style-type: none"> -- Persistent Navigation Tool (PNT) • Navigation Menu Orientation • Search Tool • Site Map • Color, Font, Graphics • Page/Document Length • Alternate file versions (.pdf, .doc) 	<p>Brower (2004) Dreze and Zufryden (1998) Grandon and Ranganathan (2001) Hearst et al (2002) Holzer and Kim (2003, 2005, 2007) Ivory and Hearst's (2002) Kalbach and Bosenick (2003) Kim et al (2007) Kirchhoff (1997) Marcos (2002) Shahabi (1997) Yu and Roh (2002) Zhang et al (2000) Zhang and Von Dran (2002)</p>
<p>Content</p> <ul style="list-style-type: none"> • Meeting Minutes • Public Calendar • Public documents • Mission Statement/City Charters • Budget Information • Job listings • Contact Information • Choice of Language • External Links • Disability Access/Accessibility Statements 	<p>Holzer and Kim (2003, 2005, 2007) OMB (2002) Section 508 (1998) Solis (2000) Spencer (2001) U.S. Federal Web Managers Council (2008)</p>
<p>Services</p> <ul style="list-style-type: none"> • Registration for Municipal Events or Services • Downloading Forms • Apply/Register For Permits and Licenses • Contract Proposals • Tax Payments • Fine Payments • Utility Payments 	<p>Al-Kibsi et al (2001) Digital Communities Organization Website Edmiston (2003) Ho (2002) Holzer and Kim (2003, 2005, 2007) Kaylor et al (2001) Layne and Lee (2001) U.S. Federal Web Managers Council (2008) West (2004) West (2005)</p>

Table 2.1: Conceptual Framework Linked to the Literature (cont)

<p>Citizen Participation</p> <ul style="list-style-type: none"> • Direct Feedback Forms • Newsletter/Listserv • Surveys/Opinion Polls • Online Bulletin Board/Chat • E-Meetings 	<p>Chadwick and May (2003) Foutz (1993) Holzer and Kim (2003) Kkabadse et al (2003) Raffray (1997) Steyaert (2000) Tolbert and Mossberger (2006) Uma (2000) Van Benschoten (2004) Weathersby (2008) West (2004)</p>
<p>Security/Privacy</p> <ul style="list-style-type: none"> • Privacy Statement/Privacy Policy <ul style="list-style-type: none"> -- Data Collection -- Data Encryption (SSL) -- Third Party disclosure • Cookies 	<p>Edmiston (2003) Holzer and Kim (2005) Kaylor (2001) McClure (2001)</p>

Conclusion

A review of the literature has shown that there are many issues related to the effective and safe operation of a city website. Website usability and design features are the key to whether citizens will feel comfortable using the site. If users have difficulty navigating or are unable to quickly find desired content, the success of the site will be in jeopardy. Properly designed city websites also require significant planning regarding the content and services that will be made available to citizens. When the proper tools are deployed on the website, citizens will be able to actively participate in the operations and monitoring of their government and respective officials. The anchor of a successful city website is its security plan. When sharing personal data, citizens need to feel safe that their information is being properly secure.

Chapter 3: Methodology

Introduction

This chapter discusses the research methodology used to describe the attributes and features of government web sites of the 31 Texas cities with populations between 50,000-125,000. Descriptive categories developed in the literature review are used as the basis to conduct a content analysis of the websites.

Descriptive Categories

In the case of government websites, end users are citizens, businesses, and visitors. Rather than the end user, this research focuses on features that government decision makers can use to determine if their e-government web sites are in line with standards established by other cities. Modeling a list of functional government performance features established by Kaylor et al (2001, 297-298) and expanded upon by criteria used by Holzer and Kim (2003, 8), this research's conceptual framework uses descriptive categories to identify the presence of these performance features and criteria on each city's web site. "Categories are intuitively appealing because they are easily linked to the familiar survey research" (Shields 1998, 213-214).

Content Analysis

Content analysis is used to operationalize the conceptual framework by accessing the websites of Texas cities with populations between 50,000-125,000. Babbie (2004, 314) describes content analysis' greatest advantage as its economy regarding time and money, requiring no large research staff or special equipment. Babbie (2004) also cites *safety* as another advantage of

content analysis, explaining that if mistakes are discovered, it is easy to repeat a portion of the study as compared to other research methods. Further, content analysis provides an empirical methodology that can be used to evaluate changes in performance factors when similar data is collected in the future (Stemler, 2001). One disadvantage of content analysis is that it is limited to the examination of recorded communications such as oral, written, or graphic data (Babbie (2004, 315). Content analysis using descriptive categories as guidelines is the most appropriate research design for this project because it allows for easy comparisons to future longitudinal studies of website attributes and features.

Inter-Rater Reliability

The Web Center for Social Research Methods states that “whenever you use humans as a part of your measurement procedure, you have to worry about whether the results you get are reliable or consistent”. Accordingly, when repetitious tasks are being performed, there is the chance for a single researcher to get tired or distracted which can result in misinterpretations or invalid assessments (Web Center for Social Research Methods).

For the purpose of this study, the inter-rater reliability issue was addressed by having an independent evaluator conduct a sample assessment of four websites which were reviewed by the primary researcher. The independent evaluator used the same coding sheet as the primary researcher.

Other than one difference in the subjective question of excessive web site colors, all of the independent evaluator’s responses exactly matched the primary researcher. The independent evaluator’s findings provided satisfactory confirmation that the primary researcher’s findings were valid.

Website Criteria to be Assessed

The descriptive categories framework is transformed into content analyses coding in table 3.1. This is done by developing specific criteria questions from each descriptive category’s topic areas. There are a total of 46 criteria from the framework which makeup the coding sheet questions.

Table #3.1 - Operationalization of the Descriptive Categories

Operationalization Table	
DESCRIPTIVE CATEGORIES	<u>Criteria To Be Evaluated For Presence</u>
1. Usability/Design/Functionality	
- Navigation Bar	1. Is there a Persistent navigation tool (PNT) menu on every page of the website? 2. Is the PNT based upon Left Navigation Design? 3. Is the PNT based upon Top Navigation Design? 4. Does the site have Secondary Navigation menus? 5. Is there a link to the Home Page on every page? 6. Do visited links change colors from original link color?
- Search Tool	7. Is there a search tool available? 8. Is a “Key Word” search available? 9. Is there an advanced search template” or help available for using the search tool?
- Site Map	10. Is a site map available?

Table #3.1 - Operationalization of the Descriptive Categories (continued)

- Color, Font, Graphics	<p>11. Does the website use a minimum amount of colors? ⁵</p> <p>12. Does the website avoid using distracting colors and/or graphics?⁶</p> <p>13. Is the font size consistent throughout the website?</p>
- Page/Document Length	<p>14. Is web page length consistent throughout the site?</p> <p>15. Are downloadable alternate file versions (.doc, .pdf, etc.) available for large documents?</p>
2. Content	
- Meeting Minutes	16. Does the website provide minutes and/or agendas (to include actions taken) of public meetings?
- Public Calendar	17. Does the website offer a calendar of events?
- Mission Statement/City Charters	<p>18. Does the website provide the city charter /city mission statement?</p> <p>19. Does the website provide city agency mission statements?</p>
- Budget Information	20. Does the website provide city budget information?
- Job Listings	21. Does the website offer job listings of public offices or position vacancies?
- Contact Information	<p>22. Does the website provide general information about specific city departments or agencies such as physical address, phone number(s), hours of operation, email address etc.?</p> <p>23. Does the website provide individual contact information for agencies, departments, employees, and government officials?</p>
- Choice of Language	24. Does the website offer access in more than one language?

^{5,6} There is no fixed design rule for this question. Its answer is based exclusively upon the researcher’s subjective preference.

Table #3.1 - Operationalization of the Descriptive Categories (continued)

- External Links	25. Does the website provide external links to private sector, State, or Federal information or services?
- Disability Access/Accessibility Statements	26. Does the website have an accessibility statement acknowledging compliance with the American Disabilities Act, Title II and Section 508?
3. Services Provided	
- Registration for Municipal Events or Services	27. Does the website provide links for users to register and/or purchase tickets for municipal events or services online?
- Downloading Forms	28. Does the website allow downloading forms such as complaints, service requests, tax forms, reporting of code violations, street repairs, etc.??
- Apply/Register For Permits and Licenses	29. Does the website allow users to apply or register for permits and/or licenses?
- Contract Proposals	30. Does the website list “Requests For Proposals” (RFPs) or open bids for city contracts?
- Tax Payments	31. Does the website allow users (or provide a link) to look up property tax assessments? 32. Does the website allow users (or provide a link) to pay property taxes?
- Payment of Fines	33. Does the website allow users to pay fines or tickets?
- Payment of Utilities	34. Does the website allow users (or provide a link) to pay utilities (water, sewer, gas, electricity)?
Citizen Participation	
- Direct Feedback	35. Does the website provide a direct link to leave comments to individual city agencies or elected officials?
- Newsletter/Listserv	36. Can users subscribe to a city e-newsletter?
- Surveys/Opinion Polls	37. Does the website offer online surveys/polls or citizen satisfaction surveys? 38. Are survey results posted on the website?
- Online Bulletin Board/Chat	39. Does the website have an online bulletin board or “real-time” chat feature which allows citizens to communicate with each other and/or government officials?
- E-Meetings	40. Does the website offer scheduled “real-time” access to city meetings?

Table #3.1 - Operationalization of the Descriptive Categories (continued)

<p>- Security/Privacy</p>	
<p>- Privacy Statement/Privacy Policy -- Data Collection -- Data Encryption -- Third Party disclosure</p>	<p>41. Does the website have a privacy or security statement/policy on the homepage and on pages that collect or accept data?</p> <p>42. Does the privacy policy identify exactly what data is being collected on the site and its use?</p> <p>43. Does the privacy policy identify the use of encryption/SSL technology when personal user information is collected on the website?</p> <p>44. Does the privacy policy address third party policy and whether personal information is disclosed to third parties?</p>
<p>- Cookies</p>	<p>45. Does the privacy policy state whether the website uses cookies?</p> <p>46. Can users still access the website if they choose to turn cookies off?</p>

Coding Scheme and Evaluation Criteria

The content analysis coding scheme and evaluation criteria are identified in table 3.2. Since the scope of this research is simply to detect the presence of the criteria identified in the descriptive categories, the coding sheet values were Yes= 0, No= 1, 2= Not Applicable, and 3= Could Not Determine.

Table 3.2: Content Analysis Coding Scheme and Evaluation Criteria

City:			
CODING KEY VALUES: 0=YES / 1=NO / 2=Not Applicable) / 3=Could not determine : ↓↓↓↓			
<i>Usability/Design/ Functionality</i>	Q#	Criteria To Be Evaluated For Website Presence	
Navigation Bar	1	Is there a Persistent navigation tool (PNT) menu on every page of the web site?	
	2	Is the PNT based upon Left Navigation Design?	
	3	Is the PNT based upon Top Navigation Design?	
	4	Does the site have Secondary Navigation menus?	
	5	Is there a link to the Home Page on every page?	
	6	Do visited links change colors from original link color?	
Search Tool	7	Is there a search tool available?	
	8	Is a “Key Word” search available?	
	9	Is there a “Search Template” or help available for using the search tool?	
Site Map	10	Is a site map available?	
Color, Font, Graphics	11	Does the website use a minimum amount of colors?	
	12	Does the website refrain from using distracting colors or background graphics?	
	13	Is the font size consistent throughout the website?	
Page/Document Length	14	Is web page length consistent throughout the site?	
	15	Are downloadable alternate file versions (.doc, .pdf, etc.) available for large documents?	

Table 3.2: Content Analysis Coding Scheme (continued)

City:			
CODING KEY VALUES: 0=YES / 1=NO / 2=Not Applicable) / 3=Could not determine : ↓↓↓↓			
<u><i>Content</i></u>	Q#	Criteria To Be Evaluated For Website Presence	
Meeting Minutes	16	Does the website provide minutes and/or agendas (to include actions taken) of public meetings?	
Public Calendar	17	Does the website offer a calendar of events?	
Mission Statement/ City Charters	18	Does the website provide the city charter /city mission statement?	
	19	Does the website provide city agency mission statements?	
Budget Information	20	Does the website provide city budget information?	
Job Listings	21	Does the website offer job listings of public offices or position vacancies?	
Contact Information	22	Does the website provide general information about specific city departments or agencies such as physical address, phone number(s), hours of operation, email address etc.?	
	23	Does the website provide individual contact information for agencies, departments, employees, and government officials?	
Choice of Language	24	Does the website offer access in more than one language?	
External Links	25	Does the website provide external links to private sector, State, or Federal information or services?	
Disability Accessibility/Accessibility Statements	26	Does the website have an accessibility statement acknowledging compliance with the American Disabilities Act, Title II and Section 508?	

Table 3.2: Content Analysis Coding Scheme (continued)

City:			
CODING KEY VALUES: 0=YES / 1=NO / 2=Not Applicable) / 3=Could not determine : ↓↓↓↓			
<u>Services Provided</u>	Q#	Criteria To Be Evaluated For Website Presence	
Registration for Municipal Events or Services	27	Does the website provide links for users to register and/or purchase tickets for municipal events or services online?	
Downloading Forms	28	Does the website allow downloading forms such as complaints, service requests, tax forms, reporting of code violations, street repairs, etc.??	
Apply/Register For Permits and Licenses	29	Does the website allow users to apply or register for permits and/or licenses?	
Contract Proposals	30	Does the website list “Requests For Proposals” (RFPs) or open bids for city contracts?	
Tax Payments	31	32. Does the website allow users (or provide a link) to look up property tax assessments?	
	32	Does the website allow users (or provide a link) to pay property taxes?	
Payment of Fines	33	Does the website allow users to pay fines or tickets?	
Payment of Utilities	34	Does the website allow users (or provide a link) to pay utilities (water, sewer, gas, electricity)?	

Table 3.2: Content Analysis Coding Scheme (continued)

City:			
CODING KEY VALUES: 0=YES / 1=NO / 2=Not Applicable) / 3=Could not determine : ↓↓↓↓			
<i><u>Citizen Participation</u></i>	Q#	Criteria To Be Evaluated For Website Presence	
Direct Feedback	35	Does the website provide a direct link form to leave comments to individual city agencies or elected officials?	
Newsletter/Listserv	36	Can users subscribe to a city e-newsletter?	
Surveys/Opinion Polls	37	Does the website offer online surveys/polls or citizen satisfaction surveys?	
	38	Are survey results posted on the website?	
Online Bulletin Board/Chat	39	Does the website have an online bulletin board or “real-time” chat feature which allows citizens to communicate with each other and/or government officials?	
E-Meetings	40	Does the website offer scheduled “real-time” access to city meetings?	
<i><u>Security/Privacy</u></i>			
Privacy Statement /Privacy Policy - Data Collection - Data Encryption - Third Party disclosure	41	Does the website have a privacy or security statement/policy on the homepage and on pages that collect or accept data?	
	42	Does the privacy policy identify exactly what data is being collected on the site and its use?	
	43	Does the privacy policy identify the use of encryption technology when personal user information is collected on the website?	
	44	Does the privacy policy address third party policy and whether personal information is disclosed to third parties?	
Cookies	45	Does the privacy policy state whether the website uses cookies?	
	46	Can users still access the website if they choose to turn cookies off?	

Population

The population reviewed consists of 31 municipal websites in Texas cities whose populations were between 50,000-125,000 based upon 2000 United State census data. City populations and official website addresses are shown in table 3.3.

Each website was evaluated using 46 questions derived from the conceptual framework descriptive category criteria⁷. The selected population of small to mid size Texas cities is representative of all geographic areas of Texas as shown in the State of Texas Map in figure 3.1.

The website analysis was conducted during the month of October, 2009. Each website took approximately 45 minutes to review.

Statistics

A percent distribution of the responses for all 46 questions is calculated for all 31 cities reviewed.

Conclusion

This chapter has presented the methodology of this research, a content analysis based upon descriptive categories of website attributes and features. The next chapter presents the results of the website content analysis describing the attributes and features of government web sites of Texas cites with populations between 50,000-125,000.

⁷ The 31 city websites will be evaluated using a scaled down version of the original 100 question coding sheet used by this researcher during the Rutgers University E-Governance Institute 2008 assessment of municipal websites in the United States.

**Table 3.3: Texas Cities With Populations Between 50,000-125,000
(per 2000 United States Census)**

CITY NAME	POPULATION	OFFICIAL CITY WEBSITE ADDRESS
Mesquite	124,523	http://www.cityofmesquite.com/
Abilene	115,930	http://www.abilenetx.com/
Beaumont	113,866	http://www.cityofbeaumont.com/
Waco	113,726	http://www.waco-texas.com/
Carrollton	109,576	http://www.cityofcarrollton.com/
McAllen	106,414	http://www.mcallen.net
Wichita Falls	104,197	http://www.cwftx.net/
Midland	94,996	http://www.ci.midland.tx.us/
Richardson	91,802	http://www.cor.net/
Odessa	90,943	http://www.odessa-tx.gov
San Angelo	88,439	http://www.sanangelotexas.org/
Killeen	86,911	http://www.ci.killeen.tx.us
Tyler	83,650	http://www.cityoftyler.org/
Denton	80,537	http://www.cityofdenton.com
Lewisville	77,737	http://www.cityoflewisville.com
Longview	73,344	http://www.ci.longview.tx.us/
College Station	67,890	http://www.cstx.gov
Baytown	66,430	http://www.baytown.org
Bryan	65,660	http://www.bryantx.gov/
Sugar Land	63,328	http://www.sugarlandtx.gov/
Round Rock	61,136	http://www.roundrocktexas.gov/
Victoria	60,603	http://www.victoriatx.org/
Port Arthur	57,755	http://www.portarthur.net/
Harlingen	57,564	http://www.myharlingen.us/
Galveston	57,247	http://www.cityofgalveston.org/
Woodlands Township	55,649	http://www.thewoodlandstowship-tx.gov/
North Richland Hills	55,635	http://www.nrhtx.com/
Temple	54,514	http://www.ci.temple.tx.us/
McKinney	54,369	http://www.mckinneytexas.org
Missouri City	52,913	http://www.ci.mocity.tx.us/
Flower Mound	50,702	http://www.flower-mound.com/



Figure 3.1: Map of Texas indicating the 31 Texas cities whose websites were reviewed

Chapter 4: Results

Introduction

The purpose of this chapter is to report and interpret the data compiled from the coding sheet utilizing descriptive categories developed from the conceptual framework. A total of 31 Texas city websites were evaluated. The organization of the chapter is linked to the conceptual framework. The coding sheet data will be presented in table form depicting the findings from all 31 city websites for each of the five descriptive categories of *Usability/Design/Functionality*, *Content*, *Services*, *Citizen Participation*, and *Security/Privacy*. A brief summary will be provided for each descriptive category's findings.

Usability/Design/Functionality

Navigation Bar

The elements in this category relate to the design of a city website's navigational features. With the exception of one city, every website had a persistent navigation tool (PNT) menu. Over 96% used a PNT based upon top navigation design. Secondary navigation menus were utilized by every site except for two. Over 93% of websites understood the importance of having a link to the home page available on every page. This feature was absent from only two sites reviewed. Only three sites were designed to have visited links change color from the original color, this feature clearly not seen as a valuable attribute by most city website designers. (See table 4.1).

Table 4.1 Results of Navigation Bar

	% Y	% N
Persistent navigation tool (PNT) menu on every page of the web site?	96.8	3.2
PNT based upon Left Navigation Design? <small>(See Note 1)</small>	0.0	96.8
PNT based upon Top Navigation Design? <small>(See Note 1)</small>	96.8	0.0
Secondary Navigation menus?	90.3	9.7
Link to Home Page on every page of website?	93.5	6.5
Visited links change colors from original link color?	9.7	90.3

Note 1. Percentages of yes and no in each population for this question do not all equal 100% because there were some “non-applicable” responses due to one (1) website not having a PNT.

Search Tool & Site Map

A search tool was present on over 93% of the websites reviewed, all of those having keyword search capabilities with the exception of two sites which only had pre-selected “quick reference” choices. Searches templates (also called advanced search features) were available on 29% of the websites reviewed.

Only 51% of the websites reviewed had site maps. In some cases, the site maps were very comprehensive and proved to be a more expeditious way to locate information compared to using the site’s search feature. (See table 4.2).

Table 4.2 Results of Search Tools and Site Map

	% Y	% N
Search tool available?	93.5	6.5
“Key Word” search available? <small>(See Note 1)</small>	87	6.5
Advanced search template or help available for using the search tool? <small>(See Note 1)</small>	29.0	64.5
Site Map?	51.6	48.4

Note 1. Percentages of yes and no in each population for this question do not all equal 100% because there were some “non-applicable” responses due to two (2) websites not having a search tool.

Color, Font, Graphics, Page/Document Length

Most websites were cognizant of the fact that excessive colors and graphics distract users. There were three sites that used rotating pictures that were distracting, but generally most used static photos applicable to the areas they were associated with. The larger cities were the few that used more colors than necessary. Font size was generally consistent on most sites, although a few deviated when links to agency portals were executed.

Most websites had web page lengths that were generally two pages or less. Four sites had excessive length pages that required a lot of mouse scrolling that would have been better served to be broken up into smaller sections.

100% of all websites provided the ability to for users to read and save large documents in PDF format. (See table 4.3).

Table 4.3 Results of Color, Font, & Graphics and Page/Document Length

	% Y	% N
Minimum amount of colors?	93.5	6.5
Avoids distracting colors and graphics?	90.3	9.7
Font size consistent throughout site?	93.5	6.5
Page length consistent throughout site?	87.1	12.9
Downloadable alternate file versions?	100	100

Summary of “/Usability/Design/Functionality”

Generally, the cities did a good job of embedding PNT’s throughout their websites. Although some were more detailed than others, most sites effectively designed secondary navigation menus to help users move to desired locations efficiently. Links to home pages were satisfactory, although every site should make an effort to make their city logos (within the PNT) a home page link as well. Websites that only have standard keyword searches should also take the extra step of adding the more robust advanced search function. Further, taking into account that

some users might prefer an indexed style approach for content searching, cities without site maps should strongly consider adding this feature.

Content

Meeting Minutes, Public Events Calendar, City/Agency Mission Statement

City meeting minutes or agendas with action items were available on every website.

Approximately 75% of all city websites had some type of public calendar identifying dates and times of public meetings, elections, civic events, etc.

City mission statements were available on two thirds of all the websites. This feature tended to be absent for cities on the lower end of the population scale. Generally, specific agency or department mission statements were more common. Regardless of their presence, it was difficult to locate these mission statements on many websites because they were deeply embedded (illogically) in secondary menus. When available, all mission statements were able to be converted into a PDF file. (See table 4.4).

Table 4.4 Results of Meeting Minutes, Public Events Calendar and City/Agency Mission Statement

	% Y	% N
Meeting minutes and/or agendas?	100	0.00
Public events calendar?	74.2	25.8
City mission statement or charter?	67.7	32.3
Agency mission statements?	80.6	19.4

City Budgets, Job Listings, Public Agency Information and Contacts, Languages

City budgets were accessible on 84% of city websites and all were downloadable into PDF format. Many sites also included previous year budgets as well.

Job vacancy listings were available on every site reviewed. This feature was easy to find on most websites.

General information about public agencies was available on every site, although the locations varied and was sometimes difficult to find. Vital information about the mayors, city council, and department heads were available on every website.

Considering the demographic makeup of Texas' population, it was surprising to find that only 3 websites provided access in Spanish. One of those sites even had numerous language options. (See table 4.5).

Table 4.5 Results of Budgets, Job Listings, Public Agency Information and Contacts, and Languages

	% Y	% N
Budget information?	83.9	16.1
Available public job positions listed?	100	0.00
Public agency general office info?	100	0.00
Individual agency contact information?	100	0.00
Website available in different languages?	9.7	90.3

External Links and Disability Access

A little over 60% of all websites reviewed had external links. Generally, most were not logically categorized and were clustered together with public, state, and federal sites. Better organization in this area is certainly warranted. In some cases, these links were hard to find due to unsystematic menu organization.

The presence of “Accessibility Statements” was one of the most disappointing findings. Less than 20% of the websites reviewed included statements regarding it’s compliance with the American Disabilities Act, Title II and Section 508. This is an area that warrants attention and improvement. (See table 4.6).

Table 4.6 Results of External Links and Disability/Accessibility Statements

	% Y	% N
External Links to private sector, State, Federal?	61.3	38.7
Disability/Accessibility statement /compliance with American Disabilities Act, Title II and Section 508?	19.4	80.6

Summary of “Content”

It was impressive that every city provided users with the ability to download public meeting minutes and agendas. The quality of the city event calendars varied widely. The best ones were those that included both official city business and civic events such as city fairs or community activities.

A slightly higher focus was seen regarding specific agency mission statements than general city mission statements. Important budget information was provided on most websites and every website made a concerted effort to include comprehensive contact information regarding their city agencies and public officials.

Although external links to private and governmental agencies were available on over 61% of the city websites, the types of links found were inconsistent, lacked structure and were often hard to find. Website users should be able to easily navigate to other local, state and federal government websites from any city website. This is a feature that needs improvement.

Major emphasis needs to be made on most websites regarding accessibility issues for those with disabilities, as only 19% acknowledged this issue. Regarding accessibility, website

language/text conversion tools are widely available and should be made available on all city web sites, particularly in states such as Texas which have diverse cultures.

Services Provided

Registration for Municipal Events or Services

Over 77% of cities did not have this function. For those that did, it was typically accomplished with a link to a municipal or public venue website.

Over 83% of all websites reviewed offered users the ability to download forms or applications online. The common forms found included street repairs (potholes, lights, etc.) and various types of applications. Over 83% of websites reviewed offered users the ability to download or directly apply for various types of permits and licenses. (See table 4.7).

Table 4.7. Results of Register and/or Purchase Event Tickets, Form Downloading and Submission, and Permit/License Applications

	% Y	% N
Links for users to register and/or purchase tickets for events online?	22.6	77.4
Forms downloading?	83.9	16.1
Online Permit/License Applications?	83.9	16.1

Contract Proposals, Payment of Taxes, and Payment of Fines

Although not always easy to find, over 74% of city websites had an E-Commerce section where request for proposals (RFPs) were listed for private contractor bidding.

It was surprising to find that only 61% of city websites provided a link to their respective property tax assessment authority. Regarding the ability to pay property taxes online, only 32%

could actually perform this function, although this feature depended exclusively on the tax assessment authority’s website capabilities.

For online payments, over 70% of cities provided the ability to pay traffic fines online. Further, 87% of all cities allowed users to pay their waters bills. With the exception of the city of College Station, gas and electric bills could not be paid on any of the city websites. (See table 4.8).

Table 4.8. Results of Requests For Proposals, Property Tax Assessments/Payments, and Fine Payments

	% Y	% N
Lists Requests for Proposals (RFPs)?	74.2	25.8
Look up property tax assessments?	61.3	38.7
Pay property tax?	32.3	67.7
Fine Payments?	74.2	25.8
Utility Payments?	87.1	12.9

Summary of “Services Provided”

Providing links to purchase tickets for municipal events or services was not a feature most cities thought necessary to include on their websites. Conversely, the ability to download forms or apply for permits and licenses was offered by most cities reviewed. Business opportunities such as RFP’s were a common feature found on all the websites.

Links to property tax assessments sites were missing on 38% of websites reviewed. This should be a standard external link for all city websites. Regarding online payments, the majority of websites provided the ability for users to pay traffic fines and water bills.

Citizen Participation

Direct Feedback

The criteria for direct feedback was that a user could send a message to a city official directly through the website. While a private email account was not required to send a message, the user was still required to provide an email address if they wanted a personal reply.

71% of cities offered users the option to sign up for electronic newsletters. There were no listserv options noted on any site.

Online surveys were found on only 9 websites reviewed. Only 3 of those 9 posted the results. For the surveys that did not post results, there was no indication as to when or if the city would post the results. (See table 4.9).

Table 4.9. Results of Direct Feedback”, “Electronic Newsletter/Listserv”, and “Survey/Opinion Poll” questions

	% Y	% N
Direct link form to send comments to city agencies or public officials?	38.7	61.3
Electronic Newsletter or Listserv subscriptions?	71.0	29.0
Online surveys/opinion polls? (See Note 1)	29.0	71.0
Are survey results posted? (See Note 1)	9.6	19.4

Note 1. Percentages of yes and no in each population for this question do not equal 100% because of non applicable responses due to twenty two (22) websites not having surveys or opinion polls.

Online Bulletin Board/Chat

Only one website offered an online chat feature and it only had one user signed up. Many cities offered archived video of public meetings, but only three cities offered live telecasting. (See table 4.10).

Table 4.10. Results of Online Bulletin Board/Chat

	% Y	% N
Online bulletin board or chat feature?	3.2	96.8
Online “real time” public meetings (e-meetings)?	9.7	90.3

Summary of “Citizen Participation”

This category was clearly a “work in progress” for most websites. Some took the initiative to provide direct links to city officials and some went the extra step to post selected questions and responses (similar to a frequently ask question section).

Subscriptions to electronic newsletters were widely offered. The quality of these newsletters and the scope of their content was beyond the scope of this research.

Online surveys were not widely used and their scope was limited. Some surveys asked users to critique the quality of their city website “experience”, while other cities used this feature to assess user’s impressions of city functions and activities. Since most surveys did not provide immediate statistical results, their value seemed to be diminished because it did not give the user any idea when or if the results would be posted.

While there were links to various social network sites, online chatting was not seen as a necessary attribute with the exception of one city. Regarding real time access to city meetings, only three cities utilized this relatively simple technology. With high speed internet, more cities

need to consider airing their public meetings live over the internet. This added dimension would certainly provide a vehicle to increase the level of citizen participation. Taking it a step further, website users would also have the ability to interact live with their city officials and participate in the meetings.

Security/Privacy

Privacy Statement/Privacy Policy

Over 74% of websites reviewed included some type of privacy policy. The quality and thoroughness was varied. Some were quite explicit and some were extremely brief. For such an important topic, particularly to the user, the link to the privacy policy was always found in tiny font at the bottom of the webpage. Bigger cities did a better job explaining the exact data being collected on their websites as well as their use of encryption (SSL) technology for protecting collected user data. Bigger cities also did a better job explaining their policy for sharing personal user data with third parties. (See table 4.11).

Table 4.11. Results of Privacy Statement/Privacy Policy

	% Y	% N
Privacy or security statement/policy on home page and pages that collect data?	74.2	25.8
Privacy policy identifies the exact data being collected and its use? (See Note 1)	61.3	12.9
Privacy policy states that encryption technology is utilized when user information is collected? (See Note 1)	32.3	41.9
Privacy policy discusses if how/if user information is provided to third parties? (See Note 1)	64.5	9.7

Note 1. Percentages of yes and no in each population for this question do not equal 100% because there were some “non-applicable” responses due to eight (8) websites not having privacy statements.

Cookies

Only 23% of websites indicated that they used cookies, with 10% indicating no. The remaining sites made no indication either way. Only one city clearly indicated that some portions of their website would not be accessible if the user did not accept cookies in their internet browser. To determine if city websites could be accessed without accepting cookies, this researcher turned off the “accept cookies” feature in the internet browser. With the exception of the one portion indicated, access to all city websites was not impaired. (see table 4.12).

Table 4.12. Results of Cookies

	% Y	% N
Does the website use cookies? (See note 1)	22.6	9.7
Users are able to access website with cookies disabled on their computers? (See note 2)	96.8	3.2

Note 1. Percentages of yes and no in each population for this question do not equal 100% because it “could not be determined” whether twenty one (21) websites were using cookies.

Note 2. All website content analysis was done with a “do not accept cookies” value in the internet browser software.

Summary of “Security/Privacy”

All government websites need to have a privacy statements/policies available for all users to read before they make a decision to use a website, particularly if they are going to provide personal data. Although this feature was present on over 74% of websites reviewed, the target goal should be 100%. Further, some privacy statements reviewed were borderline useless, as they did not address issues such as how personal data was collected, whether encryption (SSL) technology was in place, or how (of if) information is shared with third parties.

Privacy policies also need to be placed in more conspicuous locations other than at the bottom of a web page in very small font. The cities of Mesquite, Carrollton, McAllen, and Missouri City are examples of cities with comprehensive privacy policies.

Even though some users object to an outside computer system collecting data from their personal computers, cookies help all websites collect statistical data that can be used to improve their websites. Regardless, with the exception of one website, every city reviewed allowed access to their website with the “accept cookies” option turned off in the web browser software.

Chapter 5: Conclusion

Introduction

Chapter 5 summarizes the applied research project methodology and findings using the conceptual framework.

Summary of Findings/Best Practices

The purpose of this applied research project research was to describe the attributes and features of government web sites of Texas cities with populations between 50,000-125,000. This section provides tables summarizing the findings of all the descriptive categories. While not specifically identifying the best overall sites, outstanding examples of best practices are shown for specific website functional areas. Tables 5.1 thru 5.5 summarize the findings and table 5.6 provides an overall assessment and recommendations.

Table 5.1 Summary of Usability/Design/Functionality

Navigation	Most websites had well designed menus and navigational features.
Search Tools & Site Maps	<p>Search tools were available on the majority of websites reviewed, although some were more robust than others. Advance searches should be made available on all sites to complement basic key word searches.</p> <p>When available, site maps proved to be a valuable addition to the standard search features by providing comprehensive index style search capability.</p>
Color Selection & Font Consistency	<p>Color selection was generally good throughout, although a few cities used shades of green and purple which were hard on the eyes and made it difficult to focus. A few sites also had moving graphics built into their PNT which made browsing and navigating distracting.</p> <p>Font consistency was good on most websites.</p>
Web Page Length	Web pages were adequate in length, typically not taking more than two screens to view. A few exceptions required excessive scrolling.

Best Practices for Usability/Design/Functionality:

The city of Carrollton effectively organized the home page using PNT menus which subsequently launched more detailed secondary menus to help users navigate their website (see figure 5.1) In addition to a text based link to “home” on every page of their website, the city logo in the PNT was also programmed to return the user to the “home” page by clicking on it. This feature was also used by many others cities reviewed.



Figure 5.1 City of Carrollton Home Page

The city of Harlingen is another very good example of a website effectively using secondary menus to help users navigate their website (see figure 5.2).



Figure 5.2 City of Harlingen Home Page

The city of Killen had an outstanding customizable keyword search tool which allowed users to search their website as well as federal and state government websites (see figure 5.3). Killen also offered a superior advanced search template as shown in figure 5.4.

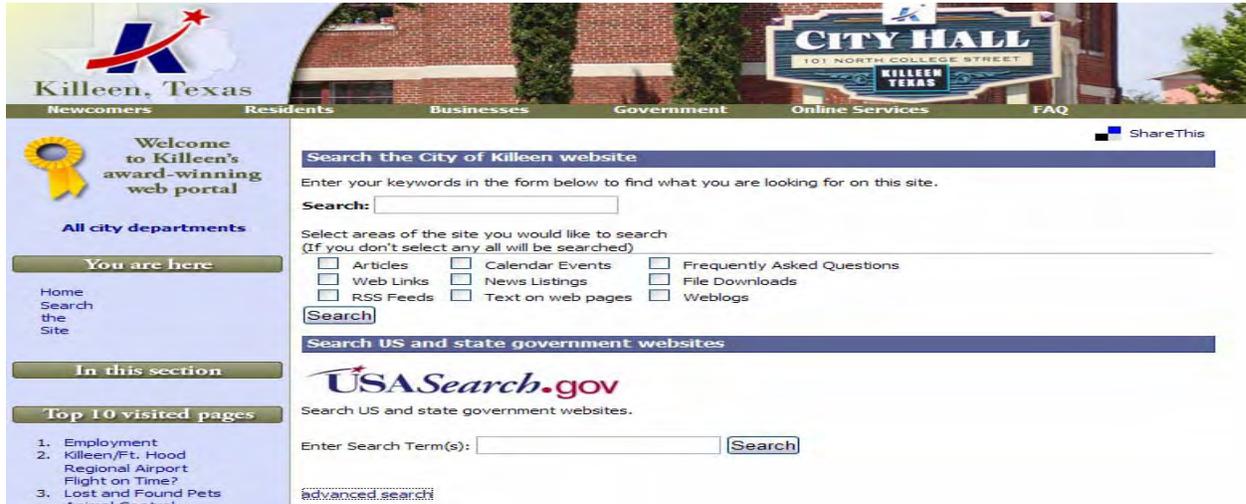


Figure 5.3 City of Killen Customizable Keyword Search Tool

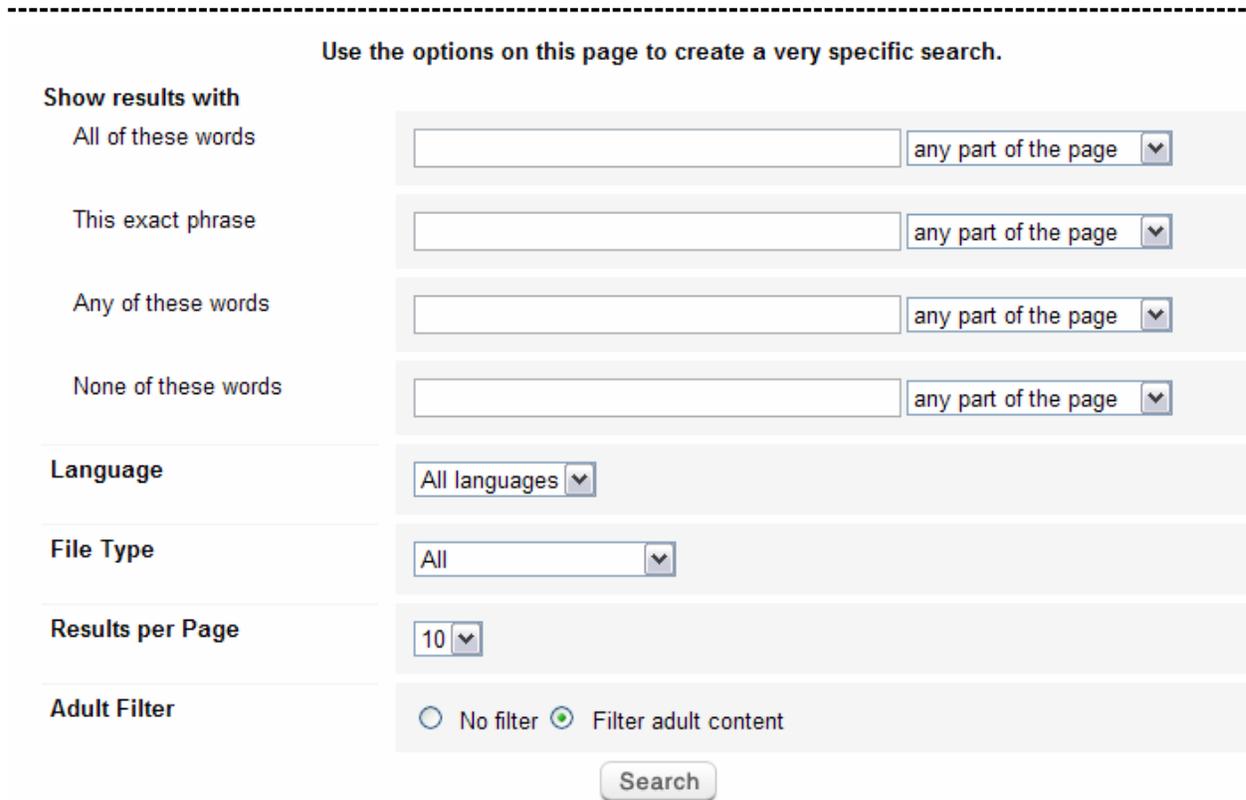


Figure 5.4 City of Killen Advanced Search Template

The City of Bryan’s site map is an outstanding example of an index styled search tool providing users with an alternative to typing in a specific search query (see figure 5.5).



Figure 5.5 City of Bryan Site Map

Table 5.2 Summary of Content

Meeting Minutes	All cities included their meeting minutes or agendas with action items.
Public Calendars	The quality of the city event calendars varied widely. The best ones were those that included both official city business events and civic events such as city fairs or community events.
Budget Information	With few exceptions, budget information was available for download on most city websites.
Job Opportunities	Job vacancies were posted on every website and were always easy to find.
Contact Information	Every city made a concerted effort to include comprehensive contact information regarding their city agencies and public officials.
Alternative Languages	Only three cities made their website available in a different language. With the ease of access to free website language conversion tools, most city websites would be well served to provide access to their sites in other languages, particularly Spanish in the state of Texas.
External Links	External links were present on many sites, but a better job could be done in their presentation and organization such as separating them into public, state, and federal agency links.
Accessibility	Significant improvement is needed in the area. Few sites acknowledged compliance with the American Disabilities act, Title II, Section 508.

Best Practices for Content:

In addition to the English language, the cities of Mesquite and Carrollton offered a feature which allowed users to translate and view their websites in Spanish. The city of Lewisville took this functionality to a higher level by offering users the choice of Spanish, Portuguese, Italian, German, and French. Figure 5.6 shows the City of Lewisville website displayed in French.

LEWISVILLE
Deep Roots. Broad Wings. Bright Future.

TRADUIRE NOTRE SITE - Sélectionnez une langue --
- Sélectionnez une langue --
Français
Allemand
W Italien
Portugais
S Espagnol

Formulaires à télécharger
I Want to Know About

Liens rapides

- ▶ WOW Brochure - Classes et activités
- ▶ Catalogue en ligne Bibliothèque
- ▶ Signaler un problème de Citizen Online
- ▶ Parcs et loisirs
- ▶ Possibilités d'emploi
- ▶ Animaux de la semaine
- ▶ CodeRed urgence Alertes
- ▶ Répertoire des services communautaires
- ▶ Connexion Senior Newsletter
- ▶ Most Wanted
- ▶ Local lois et ordonnances
- ▶ Gaz et de l'ordonnance de forage
- ▶ Contactez-nous

Police de la ligne Info-Crime
972-219-TIPS (8477)

Video on Demand

Bienvenue à la Ville de Lewisville!
Lewisville offre une atmosphère petite communauté tout en offrant toutes les commodités urbaines. Nous offrons des quartiers attrayants, spectacles abondante récréatives, éducatives et culturelles, shopping, gastronomie, et diverses entreprises et industries. En savoir plus Pourquoi les gens aiment vivre, travailler et jouer à Lewisville. Plus

VILLE NOUVELLES ET ÉVÉNEMENTS

Vacances à la Festival Hall prévue pour le samedi 5 décembre
La septième édition annuelle des Fêtes au Festival Hall aura lieu le samedi 5 décembre, dans la vieille ville Lewisville, disposant d'une large gamme d'événements familiaux libre de 7 h à 6 pm
Plus

City bureaux fermés pour Thanksgiving Holiday
Bureaux de la ville seront fermés jeudi et vendredi, 26-27 nov., à l'occasion de la fête de Thanksgiving. Tous les services municipaux essentiels continueront à fonctionner.
Plus

Plan directeur du parc réunion publique
La Ville de Lewisville tiendra un Plan directeur du parc réunion publique le mercredi 18 novembre, à 7 h, à la salle communautaire Glenmore Savage à l'annexe municipale Lewisville, 1197 W. Main St.
Plus

Météo locale
Lewisville, TX
65 °F / 19 °C
Clear
at 4:20 PM
Click for Forecast

Maire Dean Ueckert

- Mot de bienvenue du maire
- Mayor's Corner
- Contacter le maire

Liens utiles

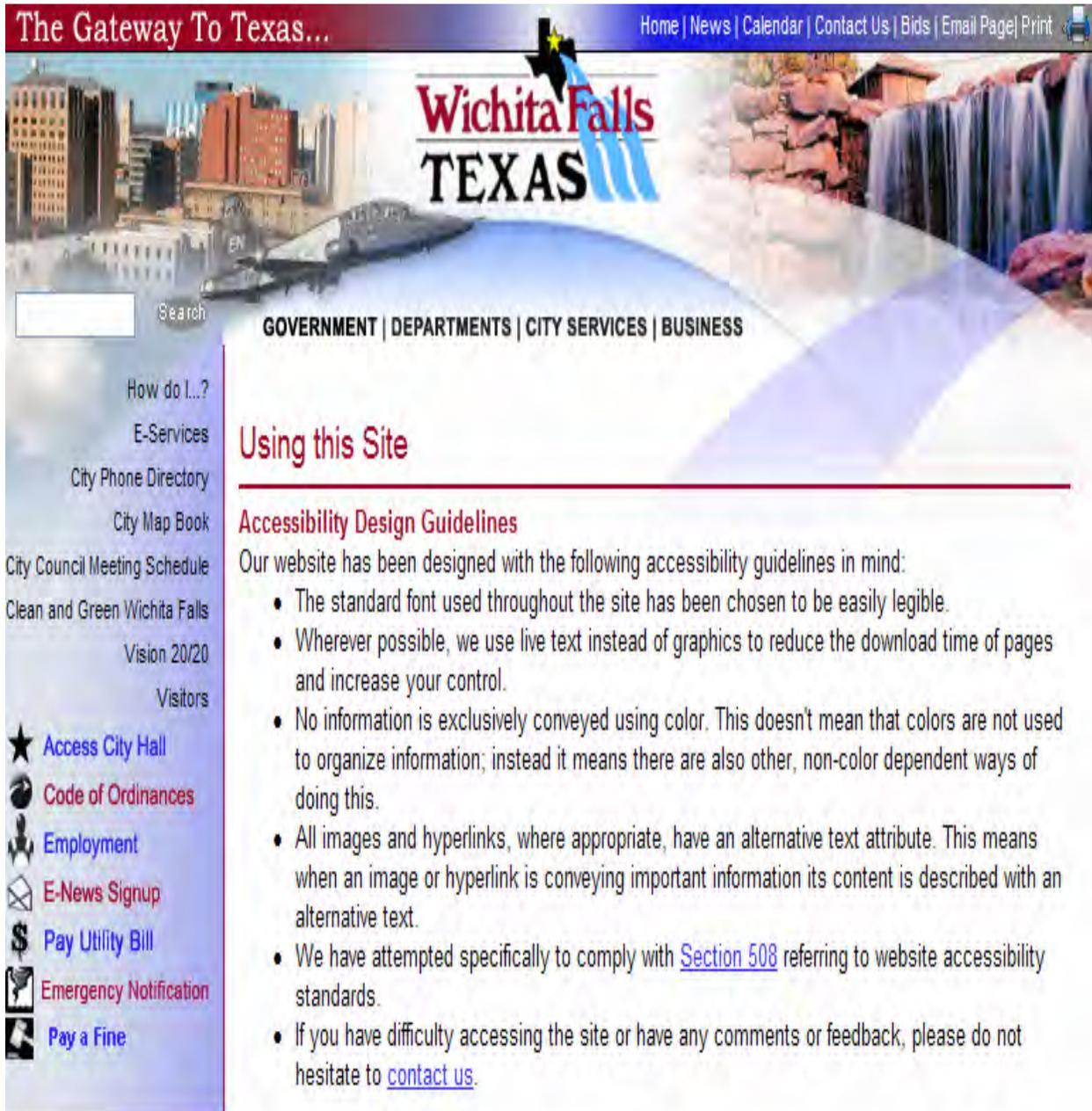
- Texas Department of Public Safety
- Denton County Home Page
- WorkinTexas.com
- Connectez Local Bus Service
- Pouvoir de choisir
- State Highway Project
- Lake Lewisville actuel Elevation

Suivre la Ville sur le Web

Photo Bucket

Figure 5.6 City of Lewisville Translated into French

The cities of Wichita Falls and Odessa were the exceptions among the cities reviewed regarding accessibility statements and their acknowledgment of the American Disabilities Act, Title II and Section 508 (see figures 5.7 and 5.8).



The Gateway To Texas... Home | News | Calendar | Contact Us | Bids | Email Page | Print

Wichita Falls TEXAS

GOVERNMENT | DEPARTMENTS | CITY SERVICES | BUSINESS

Using this Site

Accessibility Design Guidelines

Our website has been designed with the following accessibility guidelines in mind:

- The standard font used throughout the site has been chosen to be easily legible.
- Wherever possible, we use live text instead of graphics to reduce the download time of pages and increase your control.
- No information is exclusively conveyed using color. This doesn't mean that colors are not used to organize information; instead it means there are also other, non-color dependent ways of doing this.
- All images and hyperlinks, where appropriate, have an alternative text attribute. This means when an image or hyperlink is conveying important information its content is described with an alternative text.
- We have attempted specifically to comply with [Section 508](#) referring to website accessibility standards.
- If you have difficulty accessing the site or have any comments or feedback, please do not hesitate to [contact us](#).

Search

How do I...?
E-Services
City Phone Directory
City Map Book
City Council Meeting Schedule
Clean and Green Wichita Falls
Vision 20/20
Visitors

- ★ Access City Hall
- ☯ Code of Ordinances
- 👤 Employment
- ✉ E-News Signup
- 💰 Pay Utility Bill
- 📢 Emergency Notification
- 👤 Pay a Fine

Figure 5.7 City of Wichita Falls Accessibility Design Guidelines

CITY OF ODESSA
TEXAS

Home Residents Business Visitors Media Center e-Government WebMAPS Jobs Departments

11/19/2009 7:01 PM CST

Search Search

Accessibility Policy

The City of Odessa makes every possible effort to make this web site compliant with the [American with Disabilities Act Title II](#). While we are committed to making our web site accessible to all users, we recognize that not all pages may be ADA compliant at this time. We welcome comments on how to improve the site's accessibility for users with disabilities.

The City of Odessa's web site is being engineered using the recommendations of the [World Wide Web Consortium \(W3C\)](#) including HTML 4.01 Transitional, CSS 2.1, and the Web Content Accessibility Guidelines 1.0.

If you need to contact us via TDD equipment, please visit the [Relay Texas](#) site for assistance.

The City of Odessa is open to suggestions on how the accessibility of this web site can be improved. Please [contact the Webmaster](#) to offer suggestions or comments.

Figure 5.8 City of Odessa Accessibility Policy

Table 5.3 Summary of Services Provided

<p>Registration for Municipal Events or Services</p>	<p>Providing links to purchase tickets for municipal events or services was not a feature that most cities thought necessary to include on their websites.</p>
<p>Online Forms</p>	<p>The ability to download forms or apply for permits and licenses was offered by most cities reviewed.</p>
<p>Permits and Licenses</p>	<p>High marks to most sites for allowing users to apply online for various permits and licenses.</p>
<p>Contracts, Requests for Proposals (RFP's)</p>	<p>E-commerce seemed to be well embedded, with most websites listing contract opportunities and (RFP's) for private contractors to bid on.</p>
<p>Tax payments</p>	<p>Links to property tax assessments websites were available on only 62% of websites reviewed. This should be a standard external link for all city websites.</p>
<p>Payments of Fines and Utilities</p>	<p>The ability to pay traffic fines and water bills was common place on most websites. With the exception of one website, the water bill was the only utility payment option offered to users. Links to other utility service providers such as gas and electric would better serve users as well.</p>

Best Practice for Services Provided:

The City of Denton’s “Document Central” made it easy for users to find and download a wide range of documents and forms (see figure 5.9).

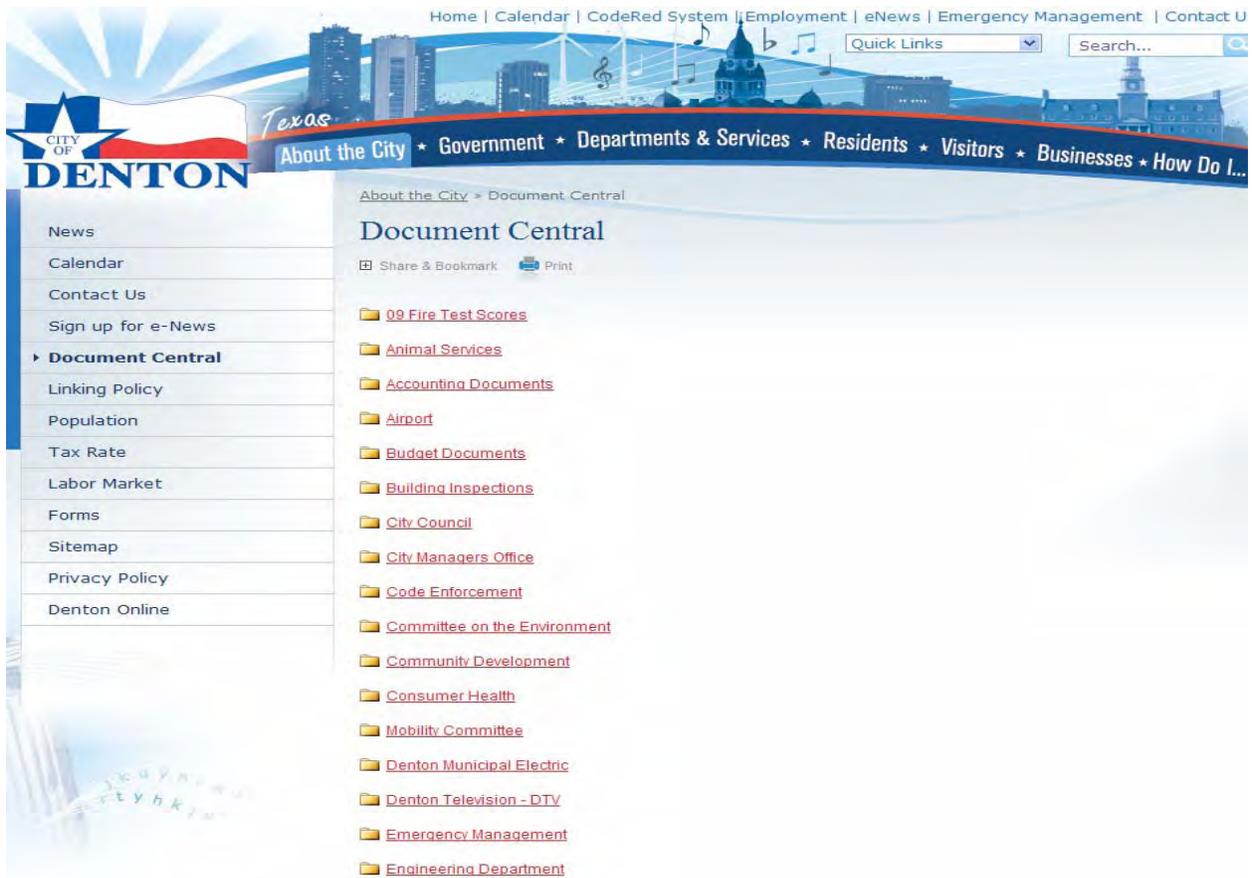


Figure 5.9 City of Denton’s “Document Central” Page

The city of College Station’s unique “ePay Website” portal allows users to pay all types of utilities bills. It also provides payment links for their municipal court and Parks and Recreation department (see figure 5.10).

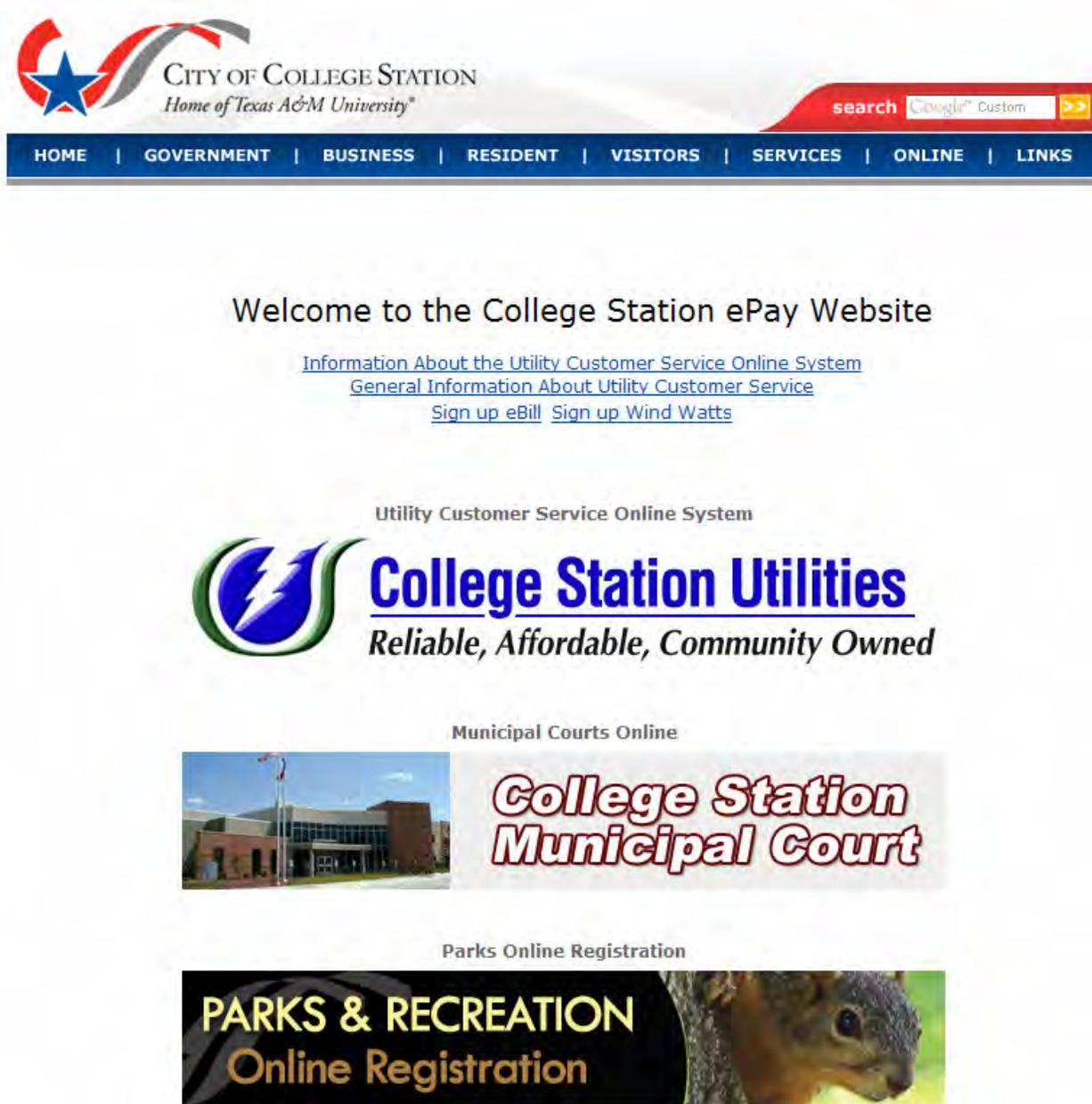


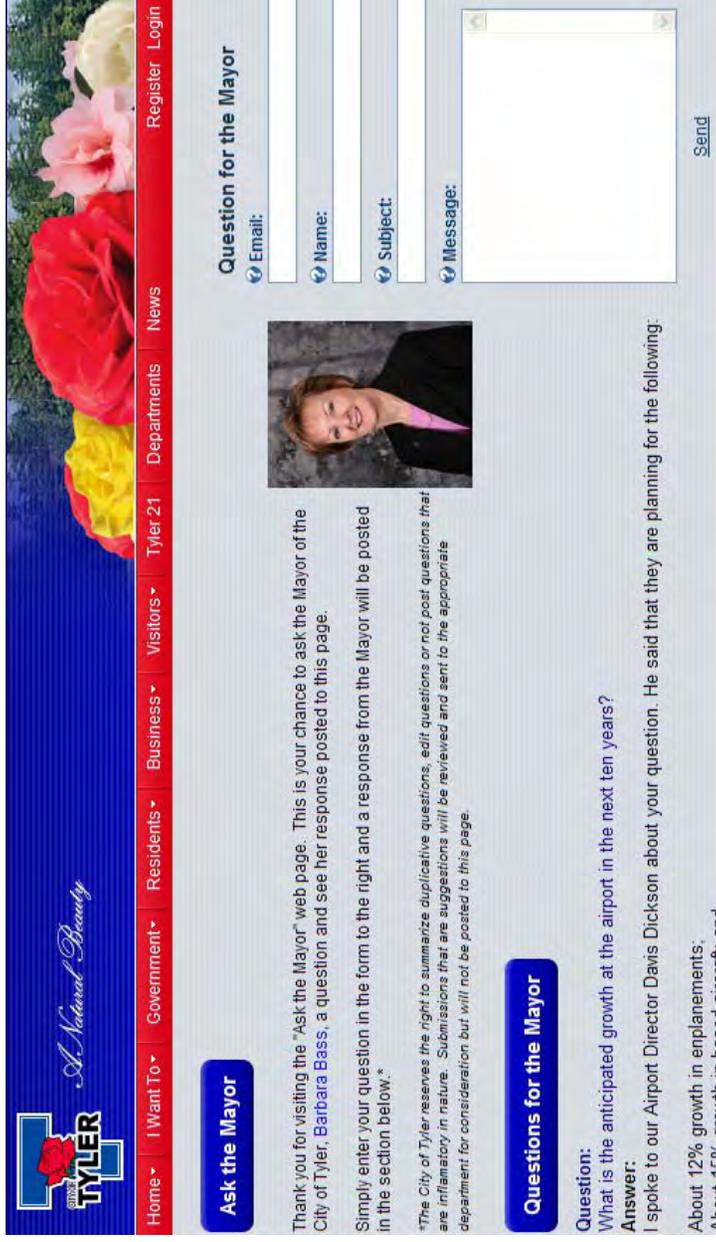
Figure 5.10 City of College Station “ePay Website” Portal

Table 5.4 Summary of Citizen Participation

<p>Direct Feedback</p>	<p>The option for users to provide direct feedback to city officials was lacking. Instead of simply providing an email address of a city official, websites would be better served to incorporate direct feedback tools that allow users to send comments directly through the website as compared to sending via a private email account.</p>
<p>Newsletter/Listserv</p>	<p>Subscriptions to electronic newsletters were common on many city websites and offered cities a good opportunity to keep citizens abreast of various issues. The quality of these newsletters and the scope of their content was beyond the scope of this research.</p>
<p>Surveys/Opinion Polls and Online Chat Systems</p>	<p>Opinion polls and surveys were only minimally used. Once a user completes an online survey, websites should provide current statistical data regarding the compiled survey responses. If that is not feasible, users should be advised when and where results will be posted.</p> <p>Online chat systems were not seen as a necessary feature except on one city website.</p>
<p>E-Meetings</p>	<p>While archived videos of city meetings were found on many websites, only three utilized technology to provide live real time meetings. This is not a sophisticated or expensive process and should be implemented by more cities.</p>

Best Practice for Citizen Participation:

The city of Tyler's "Ask the Mayor" page was an easy to use example of a *Direct Link* to a city official (see figure 5.11).



The screenshot shows the "Ask the Mayor" page on the City of Tyler website. At the top, there is a navigation menu with links for Home, I Want To, Government, Residents, Business, Visitors, Tyler 21, Departments, News, Register, and Login. Below the navigation is a banner with the text "A Natural Beauty" and "TYLER". The main content area features a blue button labeled "Ask the Mayor". Below this button, there is a thank-you message and a photo of Mayor Barbara Bass. A text box explains that users can ask questions and see responses. A disclaimer states that the city reserves the right to summarize questions and that inflammatory submissions will not be posted. Below this, another blue button labeled "Questions for the Mayor" is visible. Underneath, a question and answer are displayed: the question asks about anticipated growth at the airport in the next ten years, and the answer states that about 12% growth in enplanements is expected. At the bottom right, there is a form titled "Question for the Mayor" with fields for Email, Name, Subject, and Message, and a "Send" button.

Figure 5.11 City of Tyler "Ask the Mayor" Direct Link to a City Official

Table 5.5 Summary of Security/Privacy

<p>Privacy Statement/ /Privacy Policy</p> <p>Data Collection</p> <p>Data Encryption</p> <p>Third Party Disclosure</p>	<p>Security and Privacy statements were only found on 74.2% of city websites reviewed. With the threat of identify theft so high in today’s computerized and “connected” world, the absence of a website privacy statement seems to be a major flaw and security risk for both the city and website user. From a liability standpoint, it potentially leaves a city at risk and vulnerable if data is lost, stolen, or mistakenly provided to a third party. Not knowing how a website collects and stores personal data and whether it encrypts data also puts an individual user in a vulnerable position. The bottom line is that all government websites need to have a privacy statement/policy available for all users to read in order to make a conscious decision to use the website. The privacy policies need to be placed in a more conspicuous location other than small print at the bottom of a web page. Further, there is no excuse for a website which collects personal user data not to be utilizing encryption technology.</p>
<p>Cookies</p>	<p>The function of websites collecting cookies to obtain basic usage data from users is a very common practice. It helps websites collect statistical data that can be used to improve their websites. Regardless, with the exception of one portion of one city’s website, every website reviewed allowed access with the “accept cookies” option turned off in the web browser software.</p>

Best Practice for Security/Privacy:

The city of Mesquite’s complete privacy statement can be found in appendix 1. This is an outstanding example of a privacy statement that addresses every criteria to include data collection, data encryption, third party discloser, data encryption, and even children’s privacy issues.

Table 5.6 Overall Assessment and Recommendations

<i>Usability/Design/ Functionality</i>	<u>Assessment</u> VG= Very Good G= Good F= Fair P= Poor	<u>Recommendations For Improvements</u>
Navigation Bar	VG	Ensure city logo on PNT links to home page.
Search Tool	G	Advanced search function should be part of all search tools.
Site Map	F	Indexed site maps need to be a standard feature on all web sites.
Color, Font, Graphics	G	Stay away from shades of green and purple.
Page/Document Length	G	Ensure users do not need to scroll more than two pages for each area of website.
<u>Content</u>		
Meeting Minutes	VG	No improvement required.
Public Calendar	G	Although public calendars were present on 75% of city websites, more diversified content needs to be added to include both official city business and civic events. In addition to current information, previous and future month's activities should also be available for viewing.
Mission Statement/ City Charters	G	Respective city agencies did a good job of presenting their mission statements throughout, but each city needs to ensure that an overall (top level) city mission statement or charter is also posted (preferably on the home page).
Budget Information	VG	Only a few cities need to add this feature.
Job Listings	VG	No improvement required.
Contact Information	VG	No improvement required.
Choice of Language	P	At a minimum, every city website in the state of Texas should provide the functionality for their site to be viewed in Spanish.
External Links	F	External links need to be organized better. A good way to present links would be to categorize them by local, state, and federal agencies.
Disability Accessibility/Accessibility Statements	P	This is a high priority item that needs immediate attention by most city websites. Adherence to criteria identified in the American Disabilities Act, Title II and Section 8 will ensure that all citizens have equal access to all areas of city websites.

Table 5.6 Overall Assessment and Recommendations (Continued)

	<u>Assessment</u> VG= Very Good G= Good F= Fair P= Poor	<u>Recommendations For Improvements</u>
<u>Services Provided</u>		
Registration for Municipal Events or Services	P	At a minimum, websites should provide external links to local civic and entertainment websites.
Downloading Forms	VG	Although this area was very good throughout, some forms could only be printed. The goal should be for users to be able to complete and submit forms directly online to the respective agency.
Apply/Register For Permits and Licenses	VG	Although this area was very good throughout, some permits could only be printed. The goal should be for users to be able to complete and submit applications for permits and licenses directly online to the respective agency.
Contract Proposals	G	Although present on 74% of city websites, a better job needs to be done to make this feature easier to find from the home page.
Tax Payments	F	A link to the local property tax appraisal district should be a standard feature for all city websites.
Payment of Fines	G	Citizens should have the ability to pay traffic fines and citations on every city website.
Payment of Utilities	VG	A link to local electric and gas companies would be very beneficial for citizens.
<u>Citizen Participation</u>		
Direct Feedback	F	Users should be able to send a message to a public official directly through the city website instead of having to use an external email system.
Newsletter/Listserv	G*	* This feature was only rated on website presence. No assessment of newsletter content or quality was conducted in this research.
Surveys/Opinion Polls	P	Ensure users have access to results of all online surveys.
Online Bulletin Board/Chat	P	This area needs to be advertised better by all websites in order for it to be useful to citizens.
E-Meetings	P	Every city needs to explore this feature. Technology to transmit live public meetings over the internet is not expensive and would open the door to city government participation for many citizens.

<u>Security/Privacy</u>		
Privacy Statement /Privacy Policy - Data Collection - Data Encryption - Third Party disclosure	G	Encryption (SSL) technology needs to be in place on all city websites that collect personal user data. Privacy policies need to be identified in a more conspicuous location other than small print at the bottom of a web page.
Cookies	No Rating	City websites need to do a better job advising users whether their site collects cookies. Users should be able to view a city website regardless of whether their web browser is set to accept cookies.

Recommendation for Further Studies

A subsequent longitudinal assessment is recommended to determine whether the city websites reviewed in this research project have made improvements. Further, since individuals gather information differently as seen when conducting an inter-rater reliability assessment with another individual, alternative studies using independent evaluators would also be warranted to rate the subjective effectiveness of each city's website based upon each category reviewed in this study.

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Appendix 1 – City of Mesquite Privacy Policy

The City of Mesquite and its subsidiaries are committed to respecting and protecting your privacy. The Web site is structured so that, in general, you can visit City of Mesquite on the Web without identifying yourself or revealing any personal information.

Once you choose to provide personally identifiable information (any information by which you can be identified), you can be assured that it will only be used for the intended purposes.

This statement regarding the privacy of the personally identifiable information you provide online covers the four foundation principles of fair information: Awareness, Access, Security, and Oversight.

Awareness

The City of Mesquite provides this Online Privacy Statement to make you aware of the privacy policy, practices and of the choices you can make about the way your information is collected and used. To make this notice easy to find, it is available on the bottom of almost every page at our site.

What information is collected?

On some City of Mesquite pages, you can submit personal information for employment consideration, volunteer services and register to receive materials or services. The types of personal information collected at these pages are name, home address, e-mail address, home telephone and/or social security information (for employment eligibility verification).

In order to tailor subsequent communications to you and continuously improve services, you may also be asked to provide information regarding your personal or professional interests,

demographics, experience with city services and more detailed contact preferences. Some electronic newsletters record anonymous data about articles you have expressed interest in.

How will this information be used?

The City of Mesquite uses your information to better understand your needs and provide you with better service. Specifically, your information is used to communicate back to you, to update you on services and benefits and personalize the city Web site for you.

Will this information be shared?

The City of Mesquite will not sell, rent or lease your personally identifiable information to others. Unless required by law, the city will only share the personal data you provide online with other City of Mesquite entities and/or business partners who are acting on behalf of the city for the uses described in "How will this information be used? ". Such entities and/or business partners are governed by privacy policies with respect to the use of this data and are bound by the appropriate confidentiality agreements.

Children's Privacy Protection

The City of Mesquite takes special care to protect the privacy needs of children under the age of 13 and encourages parents to be an active participant in their child's online activities and interests. The city abides by the Children's Online Privacy Protection Act (COPPA) requirements. The vast majority of the city Web pages do not target and are not intended for children under the age of 13. Pages that do not target children will not knowingly collect data from them. If personal data from a child is discovered, the data will be eliminated. A very few Web pages in the "Upcoming Events" and "Volunteers" may include children under the age of 13 as part of a broader family audience target. Those specific Web pages are clearly identified and

provide an explicit privacy notice and processes to obtain parental approval, provide data access and data removal process for parents. Data collected from children is done so through a printed entry form that is mailed or faxed to the Volunteer Services Coordinator. Parental approval is required on the registration form.

Access

Links to third party Web sites on the site are provided solely as a convenience to you. If you use these links, you will leave the City of Mesquite site. The City of Mesquite has not reviewed all of these third party sites and does not control or is not responsible for any of these sites, their content or their privacy policy. Thus, the City of Mesquite does not endorse or make any representations about them, or any information, software or products or materials found there. If you decide to access any of the third party sites linked to this site, you do so at your own risk.

Security

The City of Mesquite is committed to ensuring the security of your information. To prevent unauthorized access or disclosure, maintain data accuracy and ensure the appropriate use of information, appropriate physical, electronic and managerial procedures have been put into place to safeguard and secure the information collected online.

This site uses Secured Sockets Layer (SSL) for secure transmissions. SSL applies encryption between two communicating applications, such as your PC and the server. When your data is transmitted over the Internet, it is encrypted or "scrambled" at the sending end and then decrypted or "unscrambled" at the receiving end. Your name, other personal information, and all credit cards and other payment information that you transmit to us will be protected by 128-bit

encryption technology, provided your browser is properly configured and your computer is operating properly. Security technology requires that you have a reasonably current browser that is capable of supporting 128-bit encryption. Current browsers such as these will activate the appropriate security features when you enter an online transaction through this site. In general, you can determine whether you are on a secure site by looking at the symbol at the bottom of your browser screen. If the key is unbroken or the lock is locked it indicates that you are using a secure server.

Furthermore, this site takes reasonable measures to maintain the confidentiality of credit cards, debit cards, charge cards, and other access numbers under its control. Additionally, it takes similar measures to protect email addresses that you provide through the website.

Oversight

If you have comments or questions about our privacy policy, please complete the Web form located in the "[Comments](#)" section and select "Privacy" as your subject category.

How the City of Mesquite uses cookies

A cookie is a piece of text asking permission to be placed on your computer's hard drive. If you agree, then your browser adds the text in a small file. The purpose of a cookie is to help analyze Web traffic or identify when you visit a particular site. Cookies allow a Web application to respond to you as an individual. By gathering and remembering information about your preferences, the Web application can tailor its operation to your needs, likes and dislikes.

The City of Mesquite uses traffic log cookies to identify what pages are being used and which ones are not. This helps aggregate and analyze data about Web page traffic and make improvements to cityofmesquite.com Web sites to better meet citizen's needs. In this case, the

City of Mesquite uses this information only for statistical analysis purposes and then the data is removed from the system. Denial of a traffic log cookie should not prevent you from using one of these sites.

A few City of Mesquite Web sites use temporary cookies as part of the visitor Web navigation experience, tracking unique IDs for that particular Web site session only. Examples of this are product registration sites. This cookie, by itself, makes the city aware that a previous cityofmesquite.com visitor has returned. If the cookie is denied, you can still use the site anonymously.

Overall, cookies help give you a better Web site to use, by letting us monitor what is working and what is not through site traffic analysis. The City of Mesquite wants to be sure you understand that accepting a cookie in no way gives us access to your computer or any personal information about you, other than the data you chose to share with us. This practice is strictly enforced. Web users have concerns about cookies, but it is believed that the benefit from their proper use is worthwhile. The City of Mesquite values the relationships with citizens and respects these concerns. The City of Mesquite works to continuously improve the City of Mesquite Web experience and personal data privacy policy and practices.

You may set your Web browser (Microsoft Internet Explorer or Netscape Navigator) to notify you of cookie placement requests or decline cookies completely. You can delete the files that contain cookies; those files are stored as part of your internet browser